

STATE OF GEORGIA
COUNTY OF FULTON

**AN ORDINANCE TO AMEND ARTICLE 8, TREE PROTECTION ORDINANCE, OF
CHAPTER 14, LAND DEVELOPMENT AND ENVIRONMENTAL PROTECTION OF THE
CITY CODE OF ORDINANCES, AS AMENDED.**

BE IT ORDAINED by the City Council of the City of Sandy Springs, GA while in regular session on February 6, 2007 at 7:00 p.m. as follows:

SECTION 1. That Article 8 of Chapter 14, as it relates to Tree Protection Ordinance and Administrative Guidelines was adopted December 13, 2005 by Ordinance No. 2005-12-12 and subsequently amended March 21, 2006 by Ordinance No 2006-03-18; and,

SECTION 2. That said Ordinance was the Tree Protection Ordinance and Administrative Guidelines formerly in effect in Fulton County; and,

SECTION 3. That The Mayor and City Council now find it important to maintain the tree canopy of the City of Sandy Springs; and,

SECTION 4. That the Mayor and City Council established a citizen task force to recommend a new Tree Conservation Ordinance with Administrative Standards and Best Management Practices; and,

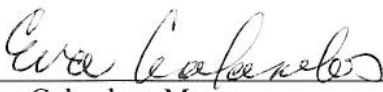
SECTION 5. That the Mayor and City Council conducted a public hearing on said Tree Conservation Ordinance with Administrative Standards and Best Management Practices, as recommended by the citizen task force, November 21, 2006; and,

SECTION 6. That Article 8 of Chapter 14, as it relates to Tree Preservation is hereby amended, adopted and approved; and is attached hereto as if fully set forth herein; and,

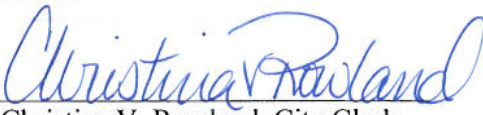
SECTION 8. That this Ordinance shall become effective upon its adoption.

ORDAINED this the 6th day of February, 2007.

Approved:


Eva Galambos, Mayor

Attest:


Christina V. Rowland, City Clerk

(Seal)



TREE CONSERVATION
ORDINANCE,
ADMINISTRATIVE STANDARDS
AND
BEST MANAGEMENT PRACTICES



Sandy Springs Tree Conservation Ordinance

1. Purpose

- a. The purpose of this ordinance is to recognize the importance of trees to the environment within the City of Sandy Springs for the purposes of health and welfare, beauty, safety, history, and general wellbeing, and to promote: (1) tree conservation, (2) the increase, renewal, and proliferation of trees and the tree canopy, and (3) the protection of existing trees. This ordinance is designed to provide reasonable minimum standards regarding the preservation, planting, protection and maintenance of trees within the City. The provisions and regulations contained herein, along with the *Administrative Standards and Best Management Practices for Sandy Spring's Urban Forest*, will guide practices to accomplish said purpose.
- b. The City of Sandy Springs further recognizes benefits derived from the conservation, proliferation, and renewal of trees and increased canopy including but not limited to:
 - i. The improvement of air quality by providing filtration of dust and fumes;
 - ii. The conservation of energy and mitigation of the urban heat island effect through shading and transpiration;
 - iii. The reduction of storm water runoff and flooding by dissipating rainfall and absorbing moisture;
 - iv. The reduction of soil erosion, and improved water quality;
 - v. The improvement of habitat for desirable wildlife by providing diversity for food, shelter, and nesting sites;
 - vi. The reduction of health risks to residents due to improved environmental conditions;
 - vii. The improvement of community aesthetics and quality of life by having a diverse environment;
 - viii. The reduction of ambient noise levels;
 - ix. The mitigation of conditions in areas of vehicular use by providing buffering and shading; and
 - x. The general enhancement of economic value to properties.
- c. The requirement of a high level of quality in the maintenance and development of land is consistent with community standards and the economic necessity of maintaining Sandy Springs as a desirable place to live and conduct business.

2. Definitions

- a. Administrative Standards – The *Administrative Standards and Best Management Practices for Sandy Spring's Urban Forest* prepared in conjunction with this Ordinance and which, as they exist and may be amended from time to time shall be incorporated herein, and a copy of which shall be maintained in the office of the City Clerk of the City of Sandy Springs, Georgia. If any term of the Administrative Standards is

deemed to conflict with the terms of this Ordinance, the terms of the Ordinance shall be controlling.

- b. Boundary Tree – A Tree 18 inches (dbh) or larger located on a property adjacent to a permitting property whose critical root zone or canopy extends into that permitting property.
- c. Buffer Tree – A Tree 18 inches (dbh) or larger located in the minimum required yards/setbacks of any property.
- d. Buildable area – The area of a lot within a given zoning district located outside the minimum required yards/setbacks of any property.
- e. Caliper – The trunk diameter measurement of nursery stock trees measured at 6 inches above the ground up to and including 4 inches caliper size and 12 inches above the ground for larger trees.
- f. Canopy Requirements – The percentage of Tree Canopy coverage as set forth in Exhibit “A,” Table 1, Canopy Requirements Table. For the purposes of this ordinance the canopy percentage on any property shall be the square footage of the total existing Tree Canopy on a property, divided by the total square footage of the permitting property.
- g. Canopy Tree - A large or medium tree with a crown size and shape that will typically provide at maturity significant shade and beneficial effects on temperature, air quality, water quality, and other environmental conditions. A canopy tree is also referred to as a “shade tree.”
- h. Certified Arborist – an arborist certified by the International Society of Arboriculture as possessing the minimum level of competency required to practice arboriculture.
- i. Critical Root Zone – The minimum rooting volume of a tree necessary to sustain the tree’s life, generally defined by the tree’s drip line or 1.25 feet for every inch (dbh), which ever is greater, to a depth of 3 feet.
- j. Damaged Tree – A Tree which has damage to any of its parts, including the roots, root buttress, trunk, or branches.
- k. Destroyed Tree – A Tree which has damage to any of its parts causing, as determined by the Sandy Springs Arborist, the tree’s survival beyond three (3) growing seasons to be unlikely.
- l. Diameter at Breast Height (dbh) – The diameter of a Tree’s trunk measured at 4.5 feet above the ground. For multi-trunk trees the diameter is measured at the narrowest point beneath the point of attachment of the multiple trunks.
- m. Ecological Compatibility – The suitability and functionality of a given tree species for its growing site based on its potential size, slope, exposure, soil, and drainage preferences; growth and structural characteristics; and use in the landscape.
- n. Hazardous Tree– A Tree where the tree is at risk for failure because it is dead or structurally defective, and where that failure could result in personal injury or property damage.
- o. Land Disturbance Permit – A permit issued by the Sandy Springs Department of Community Development that authorizes the commencement of alteration or development of a given tract of land or the commencement of any land disturbing activity.
- p. Landmark Tree – A: (1) hardwood Tree 27 inches (dbh) or larger, (2) pine tree 30 inches (dbh) or larger provided that said pine tree is not located

- within thirty (30) feet of any structure, or (3) dogwood or redbud tree 10 inches (dbh) or larger being in fair or better condition.
- q. Protected Tree - A Tree 18 inches (dbh) or larger, other than a Landmark Tree or Buffer Tree, in fair or better condition.
- r. Site /Tree Conservation Plan (STCP) - A plan as required in Section 6 of this Ordinance.
- s. Sandy Springs Arborist / City Arborist – The individual authorized by the Director of the Department of Community Development to administer and enforce the requirements and standards as set forth in the Sandy Springs Tree Conservation Ordinance.
- t. Tree – A self supporting woody plant material capable of reaching a minimum (dbh) of 6 inches and a height of 15 feet.
- u. Tree Canopy – The square footage of the aggregate of the canopy of all Trees contained on a property.
- v. Tree Protection Zone – The area of a lot for a given zoning district defined by the minimum required yards and the critical root zone of any protected tree.
- w. Tree Removal Permit – A permit as required pursuant to this Ordinance issued by the Sandy Springs Arborist for land disturbance or the removal of trees.
- x. Qualified Professional – Any individual possessing a degree in forestry, urban forestry, landscape architecture, or horticulture, having been trained by the City of Sandy Springs in the implementation of this ordinance, and tree protection in building construction. The City Arborist shall certify and maintain a list of Qualified Professionals.

3. Tree Removal or Destruction – Tree Removal Permit Required

- a. The removal or destruction of any Landmark Tree shall require a Tree Removal Permit pursuant to Section 4(a) of this Ordinance.
- b. Any land disturbing activity or construction activity including but not limited to grading, digging, soil disturbance or other activity which could result in damage to root structure in the Critical Root Zone of any Boundary Tree shall require a Tree Removal Permit pursuant to Section 4(b) of this Ordinance.
- c. The removal or destruction of any Landmark Tree, Protected Tree or Buffer Tree on residential property devoted to single family or duplex residential use shall require compliance with Section 5 of this Ordinance.
- d. The removal or destruction of: (1) any Protected Tree on property devoted to other than single family or duplex residential use, or (2) any Landmark Tree, Protected Tree or Buffer Tree in conjunction with activity requiring the issuance of a building permit (other than a building permit for a deck, open air patio, fence, or interior renovations), demolition permit, land disturbance permit, or erosion and grading permit by the City of Sandy Springs, Georgia, shall require a Tree Removal Permit in compliance with Section 6 hereof.
- e. All permit requirements as set forth herein shall be deemed cumulative with the most restrictive category being operative regarding any particular application.

- f. A Hazardous Tree may be removed without a Tree Removal Permit; provided, however, should the Hazardous Tree have otherwise met the requirements of being a tree protected under the terms of this Ordinance, including but not limited to a Landmark Tree, Buffer Tree, Boundary Tree, or Protected Tree, the owner of the property shall immediately notify the City Arborist of the removal of the tree and provide documentation that the removed tree was a Hazardous Tree as defined herein. Should it be determined that any tree so removed was not a Hazardous Tree, the provisions of this Ordinance shall be applied regarding the removal of such tree.
- g. Nothing in this Ordinance shall prohibit or restrict normal tree maintenance (including the removal of dead wood and branches or limbs which endanger life or property); provided, however, that no tree protected herein shall be limbed, topped or pruned in a manner so as to deprive the tree of continued viability.

4. Tree Removal Permit - Landmark Tree / Boundary Tree

- a. Landmark Trees
 - i. A Tree Removal Permit allowing the destruction or removal of a Landmark Tree pursuant to this Section shall be permitted only if the City Arborist determines that the removal of said Landmark Tree is warranted based upon: (1) the size and configuration of the property; (2) the physical condition of the Landmark Tree; (3) the Tree Canopy of common areas appurtenant to the property; or (4) other factors creating undue hardship for the applicant including but not limited to: pedestrian or vehicle traffic on or adjacent to the property; the configuration of buildings, structures and utilities on or adjacent to the property; cost effectiveness of potential alternatives to tree removal; whether the tree contributes to meeting any of the requirements set forth in this Ordinance or other requirements set forth by the City; or generally recognized good forestry practices.
 - ii. All Landmark Trees removed pursuant to section (i) above shall be replaced by the planting of a new tree(s) on the property of a comparable species and with a canopy potential of 150% of the canopy of the Landmark Tree to foster the enhancement of the tree canopy. If, however, the City Arborist determines that replacement is not practical based upon the factors set forth in (a)(i) above, payment may be made into the Sandy Springs Tree Bank in lieu of replacement planting. The compensation for the lost Tree Canopy shall be calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment.
 - iii. A Tree Removal Permit shall not be issued hereunder until both: (1) payment of any required amounts have been received by the Sandy Springs Tree Bank, and (2) the City has been provided adequate assurances of any required canopy replacement.
- b. Boundary Trees

- i. No land disturbing activity or construction activity including but not limited to grading, digging, soil disturbance or other activity resulting in damage to root structure in the Critical Root Zone of any Boundary Tree shall be permitted should the City Arborist determine that the activity will deprive the Boundary Tree of continued viability.
- ii. Should the City Arborist determine that it is uncertain whether the proposed land disturbance or construction activity will deprive the Boundary Tree of continued viability, and that there is not a sufficient basis to prohibit the activity under section (b)(i), a Tree Removal Permit allowing the activity shall be issued only after compliance with Section 7 of this Ordinance.
- iii. Should the City Arborist determine that the proposed land disturbance or construction activity will not deprive the Boundary Tree of continued viability; a Tree Removal Permit shall be issued.

5. Tree Removal Permit – Residential Use

A Tree Removal Permit pursuant to this Section shall be issued only upon compliance with the following:

- a. Required Documentation
 - i. In conjunction with an application pursuant to this section, the applicant shall submit to the City Arborist documentation (i.e. photographs, drawings, or similar documentation deemed acceptable by the City Arborist) showing the location of all existing Trees on the property. Such documentation shall show the location, species, and approximate caliper size of all existing Trees noting with specificity the Landmark Trees, Protected Trees and Buffer Trees which are proposed to be removed pursuant to this Section.
- b. Landmark Trees
 - i. The removal of Landmark Trees pursuant to the Section shall be in accordance with Section 4(a)(i-ii) above.
- c. Protected Trees
 - i. If: (1) the applicant has submitted the documentation required by Section (a)(i) to the City Arborist not less than two (2) business days prior to the proposed removal of Protected Trees, and (2) the removal or destruction of the Protected Trees, in conjunction with all tree removal being conducted, will not cause the Tree Canopy on the property to fall below the Canopy Requirements, no Tree Removal Permit shall be required;
 - ii. For the removal or destruction of Protected Trees on property not meeting the Canopy Requirements, or property on which the removal or destruction of the Protected Tree, in conjunction with all tree removal being conducted, will cause the Tree Canopy to fall below the Canopy Requirements, the applicant shall, at its election, provide for mitigation of all lost Tree Canopy below the

Canopy Requirements by: (A) replacing the lost Tree Canopy through planting tree(s) on the property of comparable species and canopy potential, or (B) payment into the Sandy Springs Tree Bank for the lost Tree Canopy. The compensation for the lost Tree Canopy shall be calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment.

d. Buffer Trees

i. The removal or destruction of Buffer Trees shall be permitted only if the City Arborist determines that the removal of said Buffer Tree is warranted based upon: (1) the size and configuration of the property; (2) the physical condition of the Buffer Tree; (3) the Tree Canopy of common areas appurtenant to the property; or (4) other factors creating undue hardship for the applicant including but not limited to: pedestrian or vehicle traffic on or adjacent to the property; the configuration of buildings, structures and utilities on or adjacent to the property; cost effectiveness of potential alternatives to tree removal; whether the tree contributes to meeting any of the requirements set forth in this Ordinance or other requirements set forth by the City; or generally recognized good forestry practices.

ii. For removal or destruction of Buffer Trees approved pursuant to (d)(i) above, which removal or destruction, in conjunction with all tree removal being conducted, will not cause the Tree Canopy to fall below the Canopy Requirements, a Tree Removal Permit shall be issued.

iii. For removal or destruction of Buffer Trees approved pursuant to (d)(i) above, on property not meeting the Canopy Requirements, or property on which the removal or destruction of the Buffer Tree, in conjunction with all tree removal being conducted, will cause the Tree Canopy to fall below the Canopy Requirements, the applicant shall, at its election, provide for mitigation of all lost Tree Canopy below the Canopy Requirements by: (A) replacing the lost Tree Canopy through planting tree(s) on the property of comparable species and canopy potential, or (B) payment into the Sandy Springs Tree Bank for the lost Tree Canopy. The compensation for the lost Tree Canopy shall be calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment.

e. Payment / Assurances Required

i. A Tree Removal Permit shall not be issued hereunder until both: (1) payment of any required amounts have been received by the Sandy Springs Tree Bank, and (2) the City has been provided adequate assurances of any required canopy replacement.

6. Tree Removal Permit – Site/Tree Conservation Plan Required

A Tree Removal Permit pursuant to this Section shall only be issued upon compliance with the following:

- a. Site/Tree Conservation Plan Required
 - i. In conjunction with an application pursuant to this section, the applicant shall submit a Site/Tree Conservation Plan (STCP) prepared by a Qualified Professional for review by the Sandy Springs Arborist. The approval of the STCP by the Sandy Springs Department of Community Development shall be required prior to the issuance of a Tree Removal Permit pursuant to this section.
 - ii. The STCP shall document: the species, (dbh), critical root zone and location of all existing Trees and Critical Root Zones on the property; the location, species, and caliper size of all proposed mitigation planting trees; and the location of all proposed building construction and land development activities, including grading, drainage, proposed utility locations and all proposed tree protection measures.
 - iii. The STCP shall document all Trees proposed for removal
 - iv. The STCP shall document the calculation of the Tree Canopy on the property prior to and following the implementation of the tree removal/replacement activity as set forth in the STCP.
 - v. The STCP shall document standard details for tree protection and tree planting set in compliance with the Administrative Standards.
 - vi. The STCP shall document compliance with the parking and landscape requirements in compliance with the Administrative Standards.
- b. Landmark Trees
 - i. The destruction or removal of Landmark Trees pursuant to this Section shall be permitted only if said Landmark Tree is: (1) located within the building footprint of the proposed construction as permitted by the City of Sandy Springs, or (2) outside of the permitted building footprint, and the Sandy Spring Arborist determines that the permitted land disturbance or construction activity will require the removal of said Landmark Tree based on Section 8 below.
 - ii. All Landmark Trees removed pursuant to section (i) above shall be replaced by the planting of a new tree(s) on the property of a comparable species and with a canopy potential of 150% of the canopy of the Landmark Tree to foster the enhancement of the tree canopy. If, however, the City Arborist determines that replacement is not practical based upon: (1) the size and configuration of the property; (2) the Tree Canopy of common areas appurtenant to the property; or (3) other factors creating undue hardship for the applicant including but not limited to: pedestrian or vehicle traffic on and adjacent to the property; the configuration of buildings, structures and utilities on or adjacent to the property; cost effectiveness of potential replacement; whether the tree contributes to meeting any of the requirements set forth in this Ordinance or other requirements set forth by the City; or generally recognized good forestry practices, payment may be made into the Sandy Springs Tree Bank in lieu of replacement planting. The compensation for the lost Tree Canopy shall be calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment.
- c. Boundary Trees

- i. The STCP shall document the protection of Boundary Trees in accordance with Section 4(b) of this Ordinance.
- d. Protected Trees
 - i. The removal or destruction of Protected Trees, where said removal or destruction in conjunction with all proposed removal or destruction as set forth in the STCP will not cause the Tree Canopy to fall below the Canopy Requirements, shall be permitted.
 - ii. The removal or destruction of Protected Trees on property not meeting the Canopy Requirements, or property on which all proposed removal or destruction of as set forth in the STCP will cause the Tree Canopy to fall below the Canopy Requirements, shall be permitted only if said Protected Tree is: (1) located within the building footprint of the proposed construction as permitted by the City of Sandy Springs, or (2) outside of the permitted building footprint, and the Sandy Spring Arborist determines that the permitted land disturbance or construction activity will require the removal of said Protected Tree based on Section 8 below.
 - iii. All trees removed pursuant to section (ii) above shall be replaced by the planting of a new tree(s) on the property of a comparable species and canopy potential. If, however, the City Arborist determines that replacement is not practical based upon: (1) the size and configuration of the property; (2) the Tree Canopy of common areas appurtenant to the property; or (3) other factors creating undue hardship for the applicant including but not limited to: pedestrian or vehicle traffic on and adjacent to the property; the configuration of buildings, structures and utilities on or adjacent to the property; cost effectiveness of potential replacement; whether the tree contributes to meeting any of the requirements set forth in this Ordinance or other requirements set forth by the City; or generally recognized good forestry practices, payment may be made into the Sandy Springs Tree Bank in lieu of replacement planting. The compensation for the lost Tree Canopy below the Canopy Requirements shall be calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment.
- e. Buffer Trees
 - i. The removal or destruction of Buffer Trees shall be permitted only if the City Arborist determines that the removal of said Buffer Tree is warranted based upon: (1) the size and configuration of the property; (2) the condition of the Buffer Tree; (3) the Tree Canopy of common areas appurtenant to the property; or (4) other factors creating undue hardship for the applicant including but not limited to: pedestrian or vehicle traffic on or adjacent to the property; the configuration of buildings, structures and utilities on or adjacent to the property; cost effectiveness of potential alternatives to tree removal; whether the tree contributes to meeting any of the requirements set forth in this Ordinance or other requirements set forth by the City; or generally recognized good forestry practices.
 - ii. For removal or destruction of Buffer Trees approved pursuant to (e)(i) above, which removal or destruction, in conjunction with all tree

removal set forth in the STCP, will not cause the Tree Canopy to fall below the Canopy Requirements, a Tree Removal Permit shall be issued.

- iii. For removal or destruction of Buffer Trees approved pursuant to (e)(i) above, on property not meeting the Canopy Requirements, or property on which the removal or destruction of the Buffer Tree, in conjunction with all tree removal set forth in the STCP, will cause the Tree Canopy to fall below the Canopy Requirements, all Buffer Trees shall be replaced by the planting of a new tree(s) within the minimum required yards/setback of the property of a comparable species and canopy potential. If, however, in the City Arborist determines that replacement is not practical based upon the factors set forth in section (e)(i) above, payment may be made into the Sandy Springs Tree Bank in lieu of replacement planting. The compensation for the lost Tree Canopy below the Canopy Requirements shall be calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment.
- f. Payment / Assurances Required
 - i. A Tree Removal Permit / STCP Approval shall not be issued hereunder until both: (1) payment of any required amounts have been received by the Sandy Springs Tree Bank, and (2) the City has been provided adequate assurances of any required canopy replacement.
- g. Permit Fee Incentive
 - i. Any applicant required to submit and receive an approved STCP pursuant to this Section 6, who shall present a plan which increases the existing Tree Canopy on the property above the Tree Canopy existing at the time of the submission of the STCP where said increase of the Tree Canopy is not required pursuant to any provision of this Ordinance or other law or development standard, shall receive a credit against the Permit Fees required to be paid for the project defined in the STCP in an amount equal to 1/3 of the value of the increased Tree Canopy as calculated on a square foot lost/replaced basis as set forth on Exhibit "A," Table 2, Canopy and Cost Assignment. Such reduction of fees, however, shall not exceed 50% of the amount of the Permit Fees required for the project as defined in the STCP.
- h. Field Verification
 - i. The Qualified Professional submitting the STCP shall field verify the accuracy of the STCP prior to submittal.
 - ii. A Qualified Professional shall certify successful compliance with the terms of the approved STCP to the City prior to issuance of a Certificate of Occupancy for the permitted property.
 - iii. The Sandy Springs Arborist shall validate submitted STCP's for field accuracy, and compliance as he or she deems appropriate.
 - iv. In addition to all other provisions of this Ordinance, and where allowed by law, submission of an inaccurate STCP or inaccurate certification of compliance with a STCP shall cause the submitting Qualified Professional to be removed from the approved list maintained by the City Arborist for a period of not less than ninety (90) days.

7. Boundary Tree Protection

- a. Prior to the issuance of a Tree Removal Permit pursuant to this Section, funds shall be deposited into an account established by the City in an amount determined by the City Arborist to be sufficient to offset the removal and replacement costs of the Boundary Tree. Notice shall be provided to the property owner whose property contains the Boundary Tree which notice shall include notice of the deposited funds and a copy of the Boundary Tree provisions of this Ordinance.
- b. In establishing the escrow amount required pursuant to Section (a) above, the proposed replacement tree upon which payment shall be computed shall be a comparable species and size potential to the Boundary Tree, shall be ecologically compatible with the intended growing site, and at maturity shall fully mitigate the loss of the entire canopy area of the Boundary Tree.
- c. For the purposes of the Ordinance, credit will be granted to applicants for the entire canopy Tree Canopy of a Boundary Tree protected hereunder.
- d. At any time prior to a determination authorizing the return of the escrow funds to the applicant pursuant to Section (e) below, if the property owner whose property contains the Boundary Tree ("Petitioner") contends that the permitted activity has caused the Boundary Tree to fail to survive or be in a state of irreversible decline, the Petitioner may petition the City Arborist for the payment of the escrow funds to be utilized for the removal and replacement of the Boundary Tree. Upon receipt of such petition, notice of the petition shall be provided to the applicant hereunder at the address provided at the time of the Tree Removal Permit application, or at any alternative address subsequently designated by the applicant to the City Arborist in writing, via first class and certified mail. Within thirty (30) days of mailing of the notice, the City Arborist shall make a determination as to whether the Boundary Tree has failed to survive or is in a state of irreversible decline due to the permitted activity. Notice of the decision shall be provided to the Petitioner and the applicant by certified and first class mail as set forth above. Either party may appeal the City Arborist's determination pursuant to Section 13 of this Ordinance. Should the City Arborist determine that the Boundary Tree failed to survive or is in a state of irreversible decline due to the permitted activity, and no appeal has been timely filed, or the applicant has fully exhausted his or her appellate rights, the escrow funds shall be paid to the Petitioner to offset any costs incurred in removal and replacement of the Boundary Tree. The Petitioner's rights pursuant to this section may not be exercised more than one (1) time in any eighteen (18) month period.
- e. After three (3) years from the date of the payment of the escrow funds, unless otherwise disbursed pursuant to section (d) above, the applicant shall have the right to petition the City Arborist for the return of all escrow funds held for the Boundary Tree. Should an applicant file a petition hereunder, notice of the applicant's petition shall be provided to the property owner whose property contains the Boundary Tree by first class and certified mail at the address of the property containing the Boundary Tree, and at the address set forth in the tax digest regarding the property.

Within thirty (30) days of mailing of the notice, the City Arborist shall make a determination as to whether the Boundary Tree has failed to survive or is in a state of irreversible decline due to the permitted activity. Notice of the decision shall be provided to the applicant and the property owner by certified and first class mail as set forth above. Either party may appeal the City Arborist's determination pursuant to Section 13 of this Ordinance. Should the City Arborist determine that the Boundary Tree has not failed to survive or is not in a state of irreversible decline due to the permitted activity, and no appeal has been timely filed, or the property owner has fully exhausted his or her appellate rights, the escrow funds shall be paid to the applicant.

- f. Any funds not collected by either an affected property owner or the applicant within a period of four (4) years of the establishment of the escrow fund shall be deposited in the Sandy Springs Tree Bank and be utilized for the purposes as authorized thereunder.
- g. No party hereunder shall be entitled to receive interest on any escrow funds required pursuant to this provision.

8. Tree Removal and Replacement in Conjunction with Tree Removal Permit

- a. The removal or destruction of any tree where approval is required pursuant to this section shall only be approved by the Sandy Springs Arborist, if the following conditions are met:
 - i. Unavoidable site modifications resulting from grading, utility work, and construction activities will result in destruction or irreparable damage to the tree; and
 - ii. Site plan modifications to prevent destruction or irreparable damage to the tree are impossible or unduly burdensome on the applicant.

9. Potentially Damaged Trees – Escrow of Funds

- a. Where the City Arborist determines that due to approved construction or land disturbance activity an applicant may remove a Tree pursuant to the terms of this Ordinance, and the applicant is required to pay for the lost Tree Canopy of the removed Tree, the applicant may at its election propose alternative construction methods to attempt to preserve the continued viability of the Tree. Should the City Arborist determine that the proposed alternative construction methods shall reasonably result in the survival of the Tree, that portion of the funds required to pay for the lost Tree Canopy of the Tree pursuant to the Ordinance shall be paid into an escrow fund maintained by the City.
- b. After three (3) years from the date of the payment of the escrow funds, the applicant shall have the right to petition the City Arborist for the return of all escrow funds held for the protection of the Tree. Within thirty (30) days of the petition, the City Arborist shall make a determination as to whether the Tree has failed to survive or is in a state of irreversible decline due to the permitted activity. Should the City Arborist determine that the Tree has not failed to survive or is not in a state of irreversible decline, the

funds shall be paid to the applicant. Should the City Arborist determine that the Tree has failed to survive or is in a state of irreversible decline, the funds shall be paid into the Sandy Springs Tree Bank.

- c. Any funds not collected within a period of four (4) years of the establishment of the escrow fund shall be deposited in the Sandy Springs Tree Bank and be utilized for the purposes as authorized thereunder.
- d. No party hereunder shall be entitled to receive interest on any escrow funds required pursuant to this provision.

10. Establishment of the Sandy Springs Tree Bank

- a. There is hereby established a Sandy Springs Tree Bank for the maintenance and disbursement of funds required to be paid pursuant to the terms of this ordinance.
- b. Where it is determined by the Sandy Springs Arborist that payment into the Sandy Springs Tree Bank shall be required hereunder, the required funds shall be paid to the Sandy Springs Tree Bank prior to issuance of any related permit.
- c. Funds maintained in the Sandy Springs Tree Bank shall be administered by the Director of Community Development pursuant to the rules and regulations regarding said funds as established by the Mayor and Council for the purposes of community ecological education and increasing and maintaining tree canopy in public spaces in the City of Sandy Springs.

11. Enforcement

- a. The Director of the Department of Community Development or his or her designated agents shall enforce to the terms of this ordinance.
- b. No Certificate of Occupancy shall be issued on any property without compliance with the terms of this Ordinance.
- c. Examples of violations shall include, but not be limited to:
 - i. Land disturbance or building construction without a permit.
 - ii. Improperly installed or maintained tree protection.
 - iii. The removal of applicable trees prior to the issuance of a permit.
 - iv. Non-approved encroachment of tree protection zones.
 - v. Other violations of the terms, provisions and standard of this ordinance established herein.
- d. Notices of violations, the issuance of stop work orders and citations shall be in accordance with the Code and Ordinances of Sandy Springs, Georgia.
- e. Where it is deemed necessary, the Director of the Department of Community Development shall require sureties to assure compliance to the terms, conditions and standards of this ordinance.

12. Fines and Penalties

- a. Any person, firm, corporations or other entity violating any of the provisions of this ordinance shall be liable for a fine of up to a maximum of \$1000.00 per violation per day. Each calendar day a violation exists shall be considered a separate offense. There are no maximum limitations

to the accrual of fines. Each offense shall further be subject to a maximum of six (6) months imprisonment.

- b. Each owner of any property wherein a violation exists shall be jointly and severally responsible for said violation.
- c. Removal of a Tree protected under the terms of this Ordinance without compliance with the terms hereof shall result in an assessment for the replacement of the lost canopy in the amount of three (3) times the value of the lost Tree Canopy calculated in accordance with Exhibit "A," Table 2, Canopy and Cost Assignment, being assessed against the person causing the removal of the tree.
- d. The jurisdiction for any violations hereunder shall be in the Municipal Court of Sandy Springs, Georgia.

13. Appeals

- a. Any applicant under this Ordinance aggrieved by an action of the City Arborist, or any adjacent property owner directly impacted by a decision hereunder, may appeal and be heard by the Sandy Springs Board of Zoning Appeals in accordance with the rules and regulations as set forth by the Code of Sandy Springs, and said Board.
- b. All appeals, pursuant to this section, must be filed in writing with the City of Sandy Springs Community Development Department within thirty (30) days from the date of the decision or action from which the aggrieved party appeals. All appeals must be filed on forms which can be obtained at the City of Sandy Springs Community Development Department.
- c. Appeals shall only be granted for errors of interpretation, application, or where the unique natural features of the site are such that it is impractical or impossible to apply the terms, conditions or standards of these regulations resulting in an undue hardship to the property owner.
- d. Any person aggrieved by an action of the Sandy Springs Board of Zoning Appeals as it relates to this Ordinance may appeal within 30 days to the Superior Court of Fulton County Georgia by writ of certiorari.

14. Severability and Conflicts

In the event that one or more of the provisions contained herein shall, or in the Administrative Standards incorporated herein, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this ordinance, but this ordinance shall be construed as if such invalid, illegal or unenforceable provisions had never been contained herein, unless the deletion of such provision or provisions would result in such a material change so as to cause the actions contemplated herein to be unreasonable.

15. Effective Date:

This Ordinance shall become effective upon adoption by the Mayor and Council.

EXHIBIT "A"

Table 1. Canopy Requirements Per Land Use

Land Use	Canopy Requirement (% of total lot area or subdivision area)
Residential	30
Non Residential Other	40
Commercial	40
Industrial	40

Table 2. Canopy and Cost Assignment

Tree Size	Canopy (sq.ft)	Canopy Credits	Dimensions (approx.)	Cost @ \$375/credit	Trees per acre @ 50% Canopy	Minimum size at planting
Small	250	1	16 X 16	\$375.00	87	1.5"
Medium	500	2	22.5 X 22.5	\$750.00	43.6	2 to 2.5"
Large	1000	4	31.5 X 31.5	\$1500.00	21.7	2 to 2.5"

Administrative Standards

Procedures

A. Canopy Cover Requirements

1. Canopy requirements shall be established for the protection of existing trees or the planting of new trees.
2. Canopy can be determined by actual measurement or by general assignment.
 - a. Actual measurement is the measured square footage of the canopy of a tree or contiguous stand of trees.
 - b. General assignment attributes square footage base on the potential canopy size of a species (small, medium, or large) as indicated in the Table 2 of the Ordinance, Canopy and Cost Assignment. The size potential of species is indicated in the Recommended Species List (Appendix 2a and 2b).
3. Trees planted to meet canopy cover standards of the must be maintained for a minimum of three (3) full growing seasons.

B. Calculating Canopy Credits

1. Canopy deficit is calculated by subtracting the provided canopy (protected and planted trees) from the required canopy, rounded up to the nearest 250 square foot increment.
2. Each 250 square foot increment of deficit shall constitute one (1) canopy credit.
3. Canopy credits shall be assessed at a cost of \$375.00 per credit.
4. This cost assignment is based on average wholesale cost for trees at various sizes that would provide comparable canopy, plus shipping, labor, installation, three years maintenance, and ecosystem service value.

Landscape Strips, Buffers, and Parking

A. Landscape Strips

1. Landscape plans shall be submitted along with STCP to indicate compliance to landscape, buffer, and parking requirements, conditions, standards, and details.
2. The width of landscape strips must, as a minimum, conform to the requirements of the conditions of zoning or the requirements of the Zoning Resolution, which ever is greater.
3. The width is measured from the newly dedicated right-of-way or from the property lines of contiguous parcels, as applicable.
4. No permanent structures are permitted within landscape strips. This includes retaining walls, curbing, dumpsters, detention facilities, etc. Monument signs, drainage structures, and sidewalks may be allowed with pre-approval.
5. Curb stops must be used to prevent vehicle overhang into required landscape strips and parking lot landscape islands. One curb stop per parking stall is required.
6. Signs within required landscape strips are subject to the approval of the Department of Community Development. These signs may only be located in areas of turf or groundcover and must not conflict with the growth potential of trees and shrubs. Signs are not permitted within required undisturbed buffers.
7. The deposition of storm water runoff into drainage swales through landscape strips is generally not permitted. Exceptions will be considered only if this standard will create an undue hardship to the property owner. Under no circumstances may the width of a drainage easement through a landscape strip exceed the width of the strip.
8. When fencing is required as a condition of rezoning, the finished surface of the fence must face externally to the project. The exact location for fence placement within the landscape strip shall be determined on a case by case basis by the Sandy Springs Arborist.
9. All species within required landscape strips must be ecologically compatible with the intended growing site. If non native ornamental trees are used to satisfy landscape strip requirements, they will not count for satisfying canopy requirements.
10. All plant materials are subject to approval by the Sandy Springs Arborist.
11. Trees within required landscape strips shall be provided as follows:
 - a. Landscape strips 25 feet wide or less: a minimum of one tree for every 30 linear feet of landscape strip.
 - b. Landscape strips 25 feet wide or more: a minimum of one tree for every 20 linear feet of landscape strip.

- c. Clumping is permitted
- 12. All trees must be planted in a suitable soil volume. In a normal surface planting environment with average soil depths greater than or equal to 3 feet, soil volume calculations may be based on surface areas as follows:
 - a. Small tree = 25 square feet.
 - b. Medium = 150 square feet.
 - c. Large tree = 300 square feet.
- 13. Required trees shall be planted between mid October and mid February. The survival of trees planted outside of that time period should be guaranteed by placing funds in escrow with the Department of Community Development. Funds may be placed in escrow in lieu of planting pending the desirable planting season. The total amount deposited shall include the purchase, transport and installation of plant materials.
- 14. Trees planted to meet the landscape strip standards must be maintained for a minimum of 3 full growing seasons.
- 15. Sub-surface soil cells or structural soils must be used to obtain a 3 foot minimum depth and soil volume where tree planting is to occur with limited surface areas or within built structures such as parking lots and sidewalks. (See Figure 4.a.b.c.)
- 16. All required landscape strips must be designed so a minimum of 60% of the area is covered with trees and shrubs and no more than 40% of the total coverage is in grass or ground cover.

Landscape strip coverage will be calculated as follows:

Size Potential	Square Feet
Small Tree	25
Medium Tree	150
Large Tree	300
Small Shrub*	9
Medium Shrub*	16
Large Shrub*	25

*Assumes grow-out potential

- 17. The use of mulch beneath newly planted trees is not counted as ground cover area.
- 18. Spacing and species selection is subject to Sand Springs Arborist approval.

B. Planting Within Rights of Way

1. Approval from the Department of Community Development, Department of Public Works and the Department of Transportation (D.O.T), where applicable, is required, as planting is generally not permitted in the rights-of-way. When trees are planted in the rights of way the following conditions should be met:
 - a. A minimum of 2.5" caliper trees should be planted.
 - b. A minimum soil volume per these Administrative Standards and best Management Practices must be provided.
 - c. Where trees are planted within 3 feet of landscape, ribbed root barriers are required.
 - d. Ideal spacing is 30 to 50 feet on center.
 - e. Underground utilities shall be installed prior to planting.
2. Where approval is received, the following conditions must be met:
 - a. Indemnification and maintenance agreements must be recorded with the City.
 - b. Prior to permitting irrigation or planting within City rights-of-way.
 - c. Agreements must be recorded in the name of a Homeowner's Association (along with documentation attesting to that association's existence), for subdivisions.
 - d. These agreements must be recorded in the property owner's name for all other types of projects.
 - e. Trees planted within rights-of-way cannot be counted toward the tree canopy or landscape strip requirements for a site.
 - f. Prior to planting trees in rights-of-way, a shoulder cross-section must be provided indicating the placement of the trees in relation to the curb, and underground utilities. Placement and species are subject to the approval of the Sandy Springs Arborist and the Director of Public Works
 - g. Drawings for irrigation system within rights-of-way must indicate the location of lines, heads, spray radius, shut off valves, timers and a 24 hour emergency contact phone number.

C. Buffers

1. Required undisturbed buffers must remain undisturbed and actively protected in perpetuity under the auspices of the Tree Conservation Ordinance
2. Buffers must be replanted where sparsely vegetated or where disturbed for approved access and utility crossings.

3. All buffer plant materials are subject to approval by the Sandy Springs Arborist.
4. The buffers should be replanted to meet the following standards:
 - a. They must provide a visual barrier. To accomplish this screening, the plant materials must be a minimum 5 feet in height at time of planting, a moderately fast growing evergreen with branching all the way to the ground.
 - b. Slower growing trees may be used if larger materials are planted.
 - c. The number of planting rows for tree replacement in buffers is determined by buffer width as follows:

Buffer Width	Planting Rows (Staggered)
<20'	2
20' to 30'	3
30' to 50'	4
> 50'	4 + 1 row/15

5. Drainage within or through buffers is subject to the approval of the Department of Community Development.
6. Encroachment into buffers for the construction of retaining walls, footing, or wall supports is not permitted unless otherwise specified in the conditions of rezoning. Encroachments into buffers shall require zoning modifications or variances as applicable.
7. All buffers require a 10 foot improvement setback interior and adjacent to the buffer. No grading is allowed in this improvement setback unless permission is obtained from the Department of Community Development through the Sandy Springs Arborist.

D. State Water Buffers

1. The Sandy Springs Stream Buffer Ordinance adopted December 13, 2005 requires an undisturbed natural buffer extending 50 feet and an impervious setback of 25 feet extending from the tops of the banks on all state waters. The Sandy Springs Arborist is the official delineator(s) of state waters in the City of Sandy Springs.
2. Land Disturbance within State Water Buffers is only permitted if a variance is granted. For information about how to apply for a variance, contact the Department of Community Development

E. Chattahoochee River Corridor Tributary Protection Area

1. The Sandy Springs Stream Buffer Ordinance adopted December 13, 2005 requires an undisturbed natural buffer extending 50 feet and an impervious setback of 25 feet extending from the tops of the banks on all state waters. The Sandy Springs Arborist is the official delineator(s) of state waters in the City of Sandy Springs.
2. Land Disturbance within State Water Buffers is only permitted if a variance is granted. For information about how to apply for a variance, contact the Department of Community Development

F. Off Street Parking

1. A minimum of 1 large shade tree must be planted in parking lots for every six required parking spaces. These trees can be counted towards the overall site canopy requirements.
2. Trees planted in required landscape strips do not count towards the parking lot requirement.
3. Trees planted in parking lots must be ecologically compatible with the harsh growing environment.
4. All trees planted in parking lots must be provided a minimum soil volume described in section A.11.c above.
5. Sub-surface soil cells, or structural soils must be used to obtain a 3 foot minimum depth and soil volume where tree planting is to occur with limited surface areas or within built structures such as parking lots and sidewalks. (See Figure 4.a.b.c.)
6. Parking lot landscape islands, at a minimum, shall conform to the requirements of the Zoning Resolution. These islands must be planted with at least one 2.5 inch caliper (minimum) shade tree. Storm water runoff into parking lot landscape islands may be permitted upon approval by the Sandy Springs Arborist.

Best Management Practices

Tree Conservation and Protection

A. Planning

1. Establish a budget and plan for tree conservation and protection.
2. Employ the services of qualified professionals such as registered foresters, certified arborist or professional urban foresters, to assist in the planning, implementation and follow up, including maintenance.
3. Evaluate the conservation potential of all trees on site based on their species, health, structural condition, and location in relation to site modifications and proposed structures and utilities.
4. Diagram the approximate location of the trees' critical root zones, based on 1.25 feet of radius for every inch (dbh), or based on professional judgment.
5. Evaluate trees on adjacent properties for a full range of potential impacts, and negotiate mitigating actions with the adjacent property owners.
6. Either modify the site plans or plan to remove trees that cannot be protected. Generally, trees that suffer 25% root loss are destroyed. Variables include the nature of disturbance, the potential to mitigate damage, the species of tree, its condition, and vigor.
7. The protection of clumps or groupings of trees is more effective than individual trees.
8. Plan for how the full range of site activities could potentially impact the trees. Identify staging areas for parking, material storage, construction debris, and concrete washout.
9. Identify way to insure sub-contractor understanding and compliance with the STCPs

B. Implementation

1. Conduct pre-construction tree maintenance, including the application of mulch (4" to 6 ") within the critical root zone, fertilization, and pruning remove structural defects, deadwood, or to improve clearance for equipment and structures. Educate all workers on site about tree protection techniques and requirements.
2. Establish a tree protection zone equal to the trees' critical root zone, or as a minimum along the limits of disturbance.
3. Install Protective barriers prior to any land disturbance.
4. Acceptable Tree Fencing includes the following (See Figure 1)
 - a. A minimum 4 feet high barrier, constructed in a post and rail configuration. A 2 inch x 4 inch post and a double 1 inch x 4 inch rail are recommended.
 - b. Four foot orange polyethylene laminar safety fencing.
 - c. Any deviation from the two acceptable tree fencing methods listed above must be authorized by the Sandy Springs Arborist
 - d. All tree protection fences must be accompanied by "Tree Save Area Stay Out" signage. For information on where to obtain these signs contact the Sandy Springs Arborist at 770.206.1572.
5. Construction offices, vehicular parking, worker break sites, and material storage and debris area are to be place outside of the tree protection zones.
6. Underground and overhead utility lines that would require trenching or severe pruning of protected trees should be re-routed. Tunneling or boring can be used to install underground utilities within a tree protection zone. Boring should be at least 24 inches beneath the surface. (See Figure 2).
7. Where tree roots must be cut, make only sharp, clean cuts to promote root regeneration.
8. When clearing and grading is planned in close proximity to a tree protection zone, the limit of disturbance should be defined by a clean trench cut to a depth of 36 inches, to prevent the shredding and tearing of protected roots.
9. Grade change in the Critical Root Zones of trees will destroy roots. Retaining walls should be used to minimize the impact grade changes near or within the Critical Root Zones of Protected Trees. (See figure 3).
10. Monitor compliance with tree protection requirements and tree health regularly during construction.

C. Follow-up Maintenance

1. Complete post-construction tree maintenance, including pruning, mulching, fertilization, irrigation, and soil aeration where necessary.
2. Apply at least 1 inch of water per week by deep watering in the absence of adequate rainfall.
3. Fertilize trees with phosphorus, potassium, calcium, magnesium, and other macro- and micro-nutrients as indicated by a soil test, but wait at least one year to apply any nitrogen. Fertilize lightly with nitrogen after 1 year.
4. Inspect trees annually for at least 3 and up to 5 years after construction to look for changes in condition and signs of insects or disease, and to determine maintenance needs.

Figure 1. Tree Protection Fencing

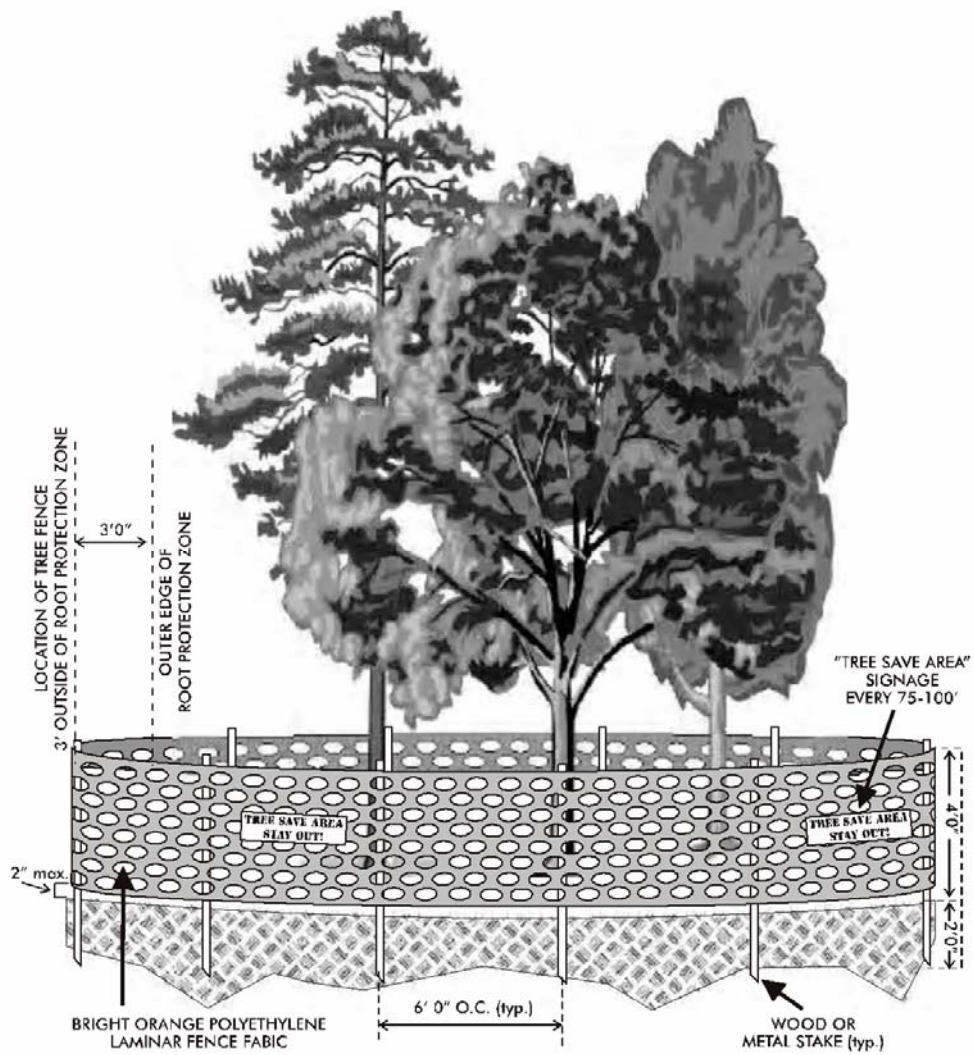


Figure 2. Tunneling for Underground Utilities

Use tunneling for underground utilities such as cable, electric, and natural gas instead of cutting an open trench. This method will help preserve existing trees or smaller tree save areas.

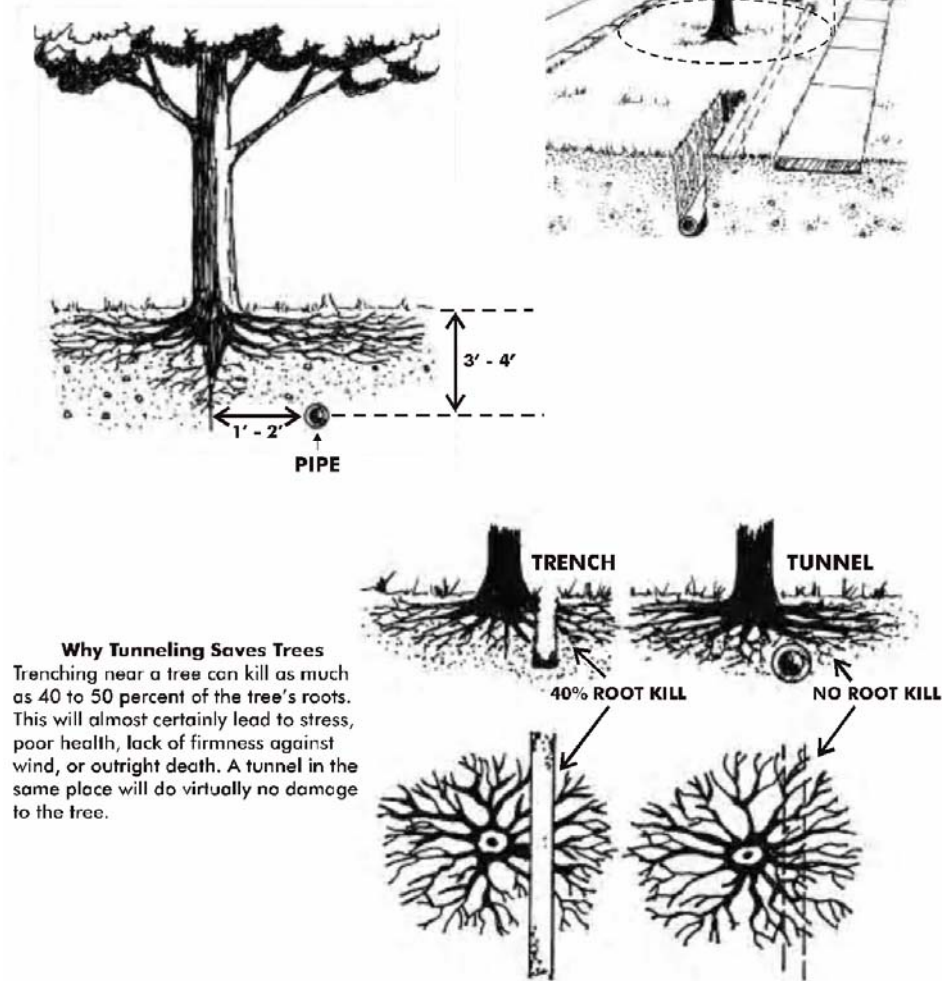
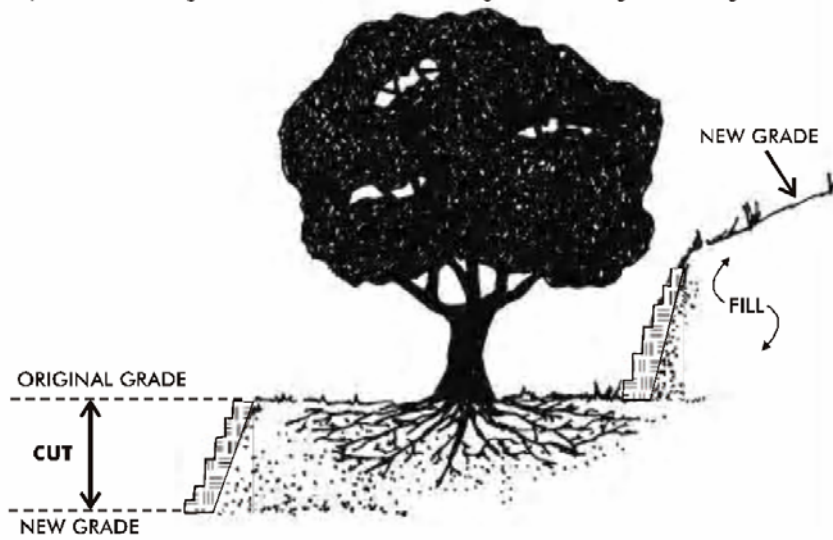


Figure 3. Correct Methods for Grade Changes

How to preserve existing trees with the use of retaining walls when grade changes are necessary



Grade Change Examples - Methods of preventing root suffocation from fill dirt when changing grade

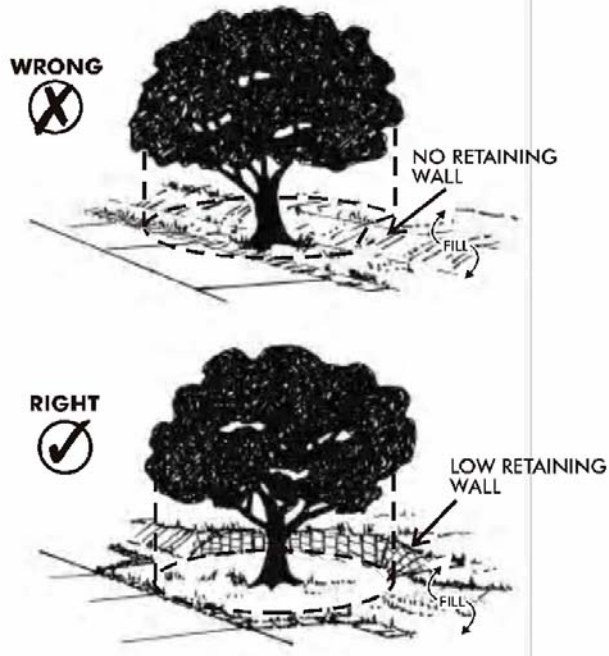


Figure 4a. Structural Cells

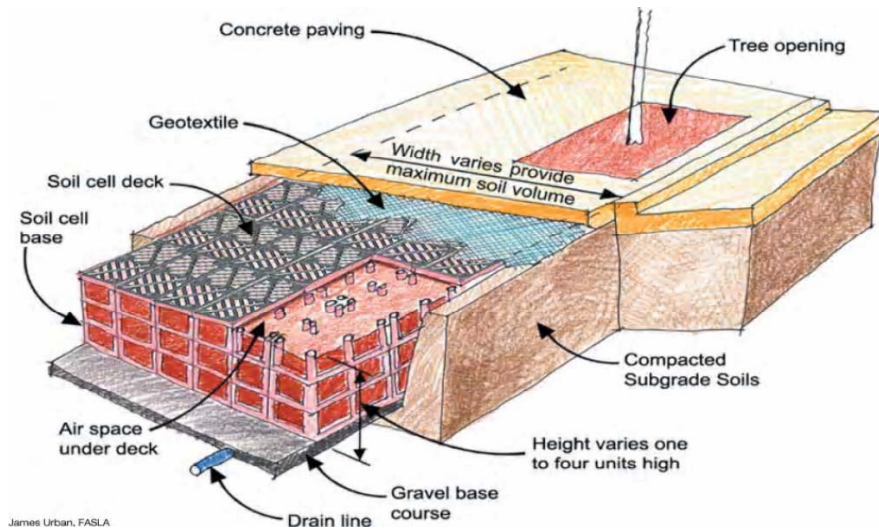


Figure 4b. Structural Cells

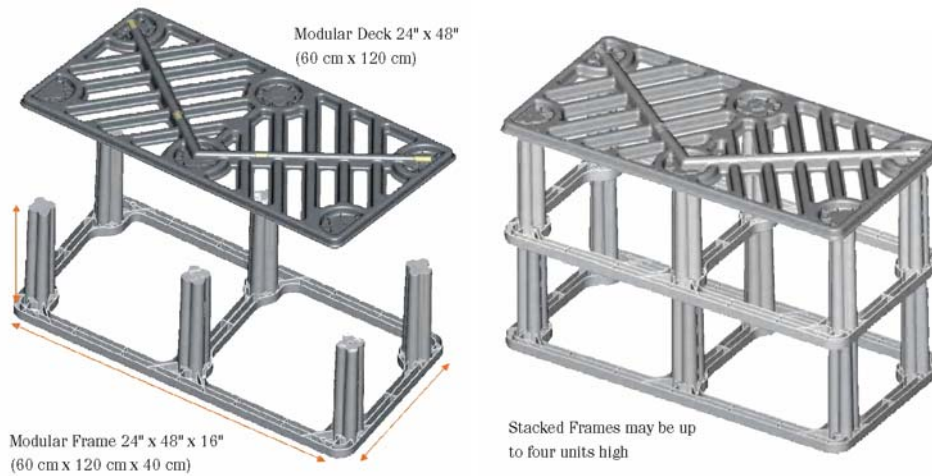
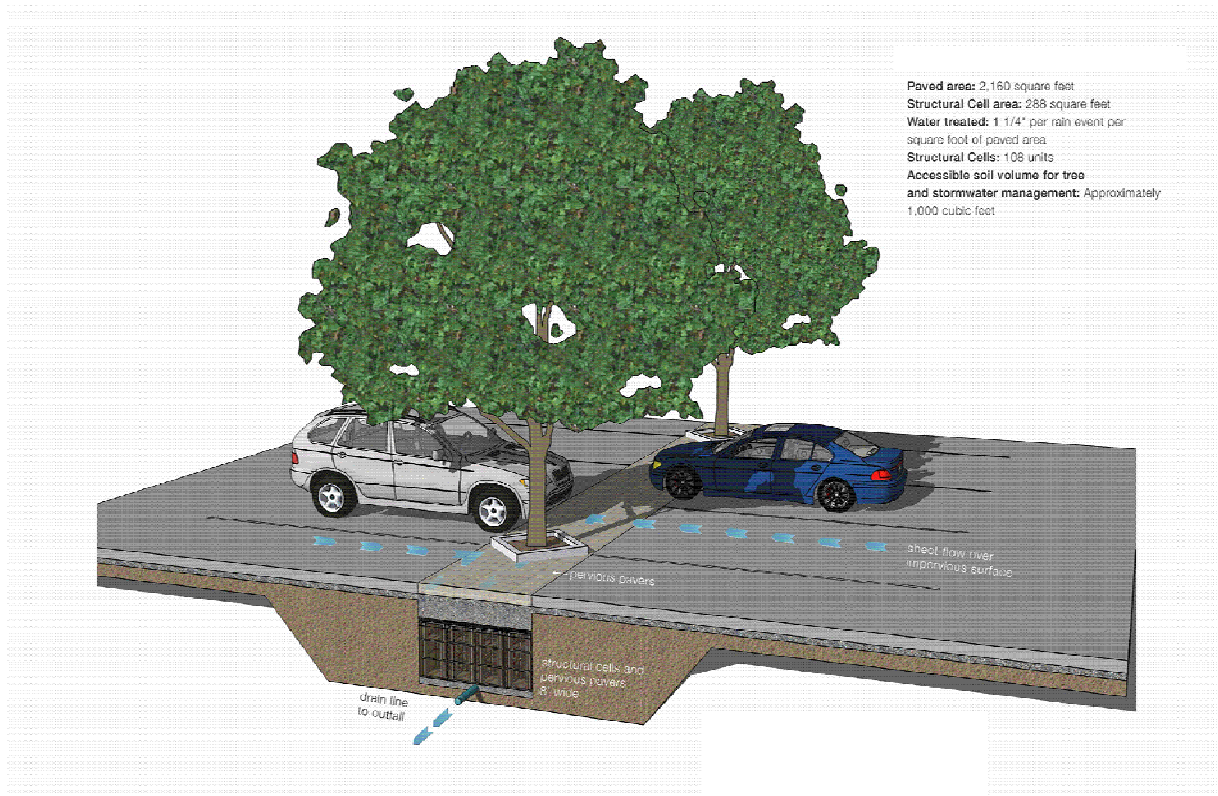


Figure 4c. Application of Structural Cells



Tree and Landscape Material Selection and Establishment

A. Standards for Selecting Quality Landscape Materials

1. Trees selected for planting must meet the minimum requirements as provided in Tables 3 through 5. provided below
2. Trees and landscape plant material must be free from injury, pests, disease, or nutritional disorders, and be of good vigor.
3. The following criteria are generally used for the determination of vigor:
 - a. Foliage should have a green or dark green color.
 - b. Vigorous trees will have large leaves and dense foliage when compared to trees with poor vigor.
 - c. Shoot growth for most vigorous trees will be at least 1 foot per year.
 - d. At least $\frac{1}{2}$ of the branches should arise from points on the lower $\frac{2}{3}$ of a trunk.
 - e. Smooth or shiny bark on the trunk and branches of a young tree usually signifies good vigor, conversely, rough and dull bark could indicate poor vigor.
4. Trunk taper: the trunks of vigorous trees will generally have an increase in diameter with a decrease in height. Trees with reverse tapers or no taper should be avoided.
5. Root color: young roots of most trees will be light in color.
6. Trees selected for planting must be free of root defects. Two types of root defects generally occur:
 - a. Kinked roots, in which taproots, major branch roots, or both are bent more than 90 degrees with less than 20 percent of the root system originating above the kink. A tree with such roots will probably bend at the soil line when released from a supporting stake.
 - b. Circling or girdling roots which circle 80 percent or more of the root system by 360 degrees or more. A tree with such roots would ultimately have less than 20 percent of its system available for support.

Table 3. Caliper To Height Ratios For Deciduous Trees

STANDARD SHADE TREES		SLOW GROWING TREES		SMALL UPRIGHT
CALIPER IN INCHES	AVERAGE RANGE	MAXIMUM / MINIMUM		AVERAGE RANGE
	HEIGHT IN FEET	HEIGHT IN FEET		HEIGHT IN FEET
5/16	-	-		2 To 3
7/16	-	-		3 To 4
9/16	-	-		4 To 5
11/16	-	-		5 To 6
7/8	-	-		6 To 8
½ To ¾	5 To 6	8	3.5	-
¾ To 1	6 To 8	10	4	-
1 To 1 ¼	8 To 10	11	5.5	-
1 1/4 To 1 ½	8 To 10	12	6.5	-
1 ½ To 1 ¾	10 To 12	14	6.5	-
1 ¾ To 2	10 To 12	14	6.5	-
2 To 2 ½	12 To 14	16	8	-
2 ½ To 3	12 To 14	16	8	-
3 To 3 ½	14 To 16	18	9.5	-
3 ½ To 4	14 To 16	18	9.5	-
4 To 5	16 To 18	22	10.5	-
5 To 6	18 AND UP	26	12	-

Table 4. Containerized Plant Material Size To Height Ratios

CONTAINER SIZE	DECIDUOUS TREES	CONIFEROUS TREES
	HEIGHT SIZES	
	IN FEET	IN INCHES
1 GALLON	1 To 1 ½	6 To 9
5 ½" x 6"	1 ½ To 2	9 To 12
	2 To 3	12 To 15
	3 To 4	15 To 18
		18 To 24
2 GALLON	2 To 3	12 To 15
7" x 7 ½"	3 To 4	15 To 18
	4 To 5	18 To 24
		24 To 30
5 GALLON	4 To 5	18 To 24
9" x 10"	5 To 6	24 To 30
	6 To 8	30 To 36
	-	36 To 42
	-	42 To 48

Table 5. Minimum Root Spread and Root Ball Diameters for Deciduous Trees

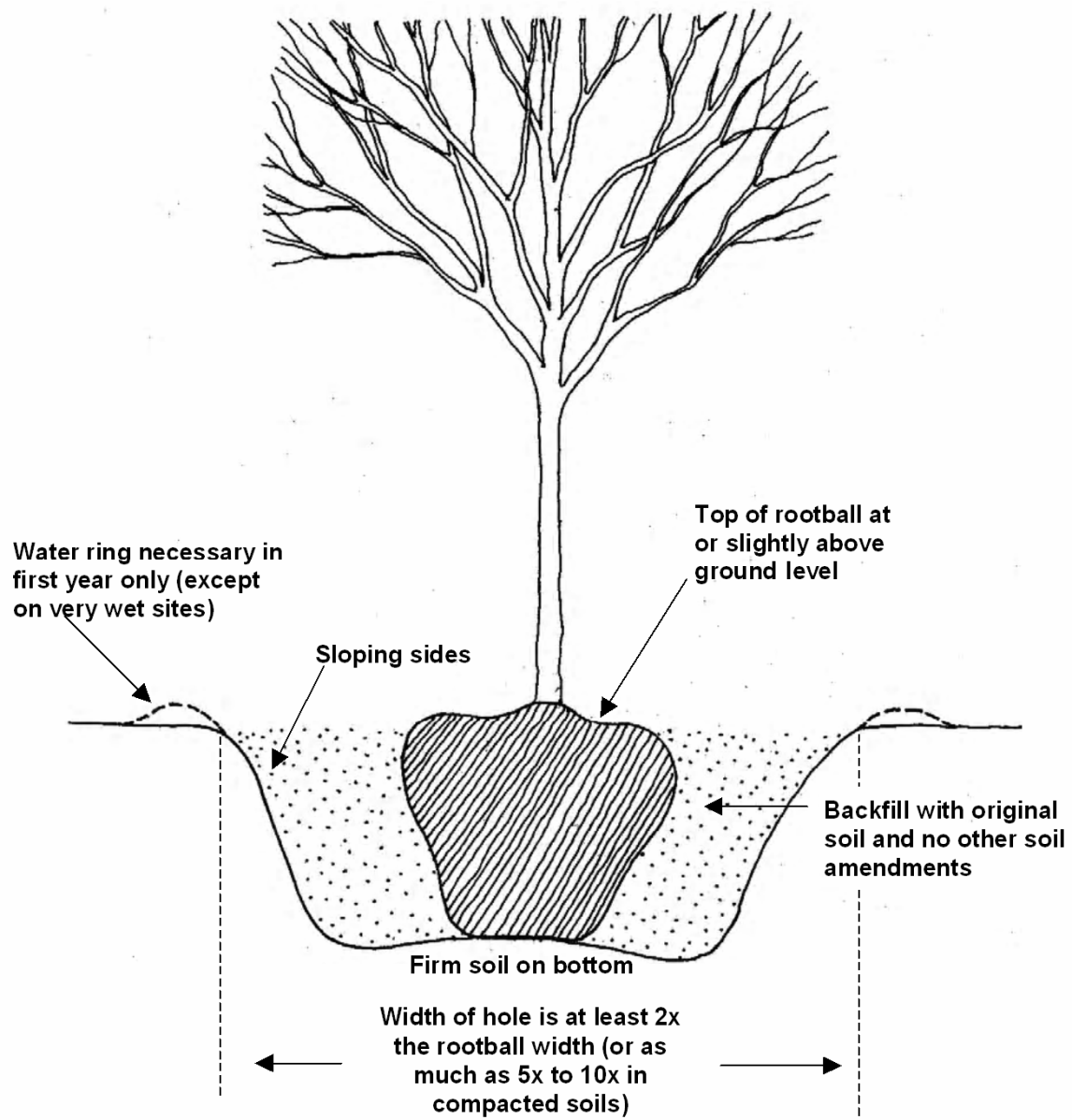
CALIPER	BARE ROOT DIAMETER SPREAD FOR ALL TREES	BALL DIAMETER FOR STANDARD AND SLOW GROWING BALL AND BURLAP TREES		BALL DIAMETERS FOR SMALL UPRIGHT TREES
INCHES	INCHES	INCHES	HEIGHT IN FEET	DIAMETER INCHES
½ To ¾	12	12	2 To 3	10
¾ To 1	16	14	3 To 4	12
1 To 1 ¼	18	16	4 To 5	14
1 ½ To 1 ¾	20	18	5 To 6	16
1 ¾ To 1 ½	22	20	6 To 7	18
1 ¾ To 2	24	22	7 To 8	20
2 To 2 ½	28	24	8 To 9	22
2 ½ To 3	32	28	9 To 10	24
3 To 3 ½	38	32	10 To 12	26
3 ½ To 4	-	38	-	-
4 To 4 ½	-	42	-	-
4 ½ To 5	-	48	-	-
5 To 5 ½	-	54	-	-

B. Planting Standards

1. Employment of proper planting techniques will be more favorable for tree establishment and will reduce attrition.
2. Transplanting procedures shall follow standards established by the International Society of Arboriculture in the “Trees and Shrub Transplanting Manual.” The following is a summary of several key practices.
 - a. Pre-Planting Considerations:
 - i. Only healthy trees with a well developed root system and a well formed top, characteristic of the species, should be planted. Standards for selecting quality stock are provided in Section C.
 - ii. Trees selected for planting must be compatible with the specific site conditions. A site specific tree list is provided in Appendix 2.
 - iii. Make certain there is adequate soil volume for the tree and the potential size of the tree is appropriate for the site, including potential conflicts with sight distance, traffic and pedestrian clearance, and overhead utilities. (Utilities Protection Center 1-800-282-7411).
 - iv. Check for underground utilities prior to digging.
 - v. Deciduous and evergreen trees should be planted between the end of October and mid February.
 - vi. Trees planted outside of this time period will NOT be accepted by Sandy Springs unless funds are placed in escrow to guarantee their survival. Funds may be placed in escrow in lieu of planting pending a suitable planting season. (See Landscaping Standards)
 - b. Planting procedures
 - i. Planting holes should be no less than 1 foot wider than the root ball or bare roots of the tree being planted. A planting hole 3 to 5 times the width of the root ball is recommended. Figure 5 is the Tree Planting Standard Detail

- ii. Trees should not be planted deeper than they were in their former location or container.
- iii. Spade compacted bottom and sides of the planting hole should be roughed or scarified to allow the penetration of developing roots.
- iv. Root barriers must be used according to CSI specifications where planting occurs adjacent to sidewalk and other hardscape surfaces, to encourage deeper rooting and to minimize root conflicts.
- v. Good water drainage from the bottom of the planting hole is essential for root establishment.
- vi. The application of soil amendments or fertilizer at the time of planting is not recommended.

Figure 5. Tree Planting Standard Detail



C. Tree Maintenance*

1. Tree Pruning

- a. Only experience professionals should prune trees. Arborists certified by the International Society of Arboriculture have tested to insure a minimum level of arboricultural competency and maintain their certification with continuing education. Arborist should follow ANSI A-300 Standards for Tree Care Operations.
- b. The objectives for tree pruning should be established prior to commencement of pruning activity.
- c. Tree should never be “topped”. Topping a tree permanently damages a tree’s structure, destroys its value, damages its health, and decreased the tree’s safety.
- d. Climbing spikes should never be used to prune a tree.
- e. Always prune branches back to parent branches or branches at least 1/3 the diameter of the branch being pruned.
- f. No more than 1/4 of the foliage of a mature tree should be removed in any one growing season.
- g. Make proper pruning cuts, using the three cut method (See Figure 6). Avoid stub cuts, flush cuts and wounds o the remaining limbs and trunk.
- h. Pruning cuts should be made just on the outside of the branch collar (see Figure 6).
- i. At the time of planting prune only dead, damaged, broken crossing, or rubbing branches.
- j. Do not remove more that 1/3 of the foliage from a young tree during any one growing season.

2. Tree Mulch

- a. Tree mulching is very beneficial to trees because it help retain soil moisture, moderates soil temperature, suppresses weed growth, reduces soil compaction, and reduces the potential for mower and string trimmer damage to trees.
- b. Use organic materials such as pine straw, leaves aged wood chips and compost. Avoid grass clippings, plastic, and rocks.
- c. Use the tree’s own fallen leaves for mulch
- d. Spread mulch in an even layer, 3-4 feet deep. Avoid mounding the mulch around the tree’s trunk.
- e. Keep mulch at lease 5 inches from the tree’s trunk.
- f. For newly established trees, mulch and area at least 6 feet in diameter.
- g. For older established trees mulch out as far as practical, mulching to the drip line is most desirable.

* Parts adapted from the Athens-Clark County Best Management Practices

Figure 6. Three Cut Pruning Method

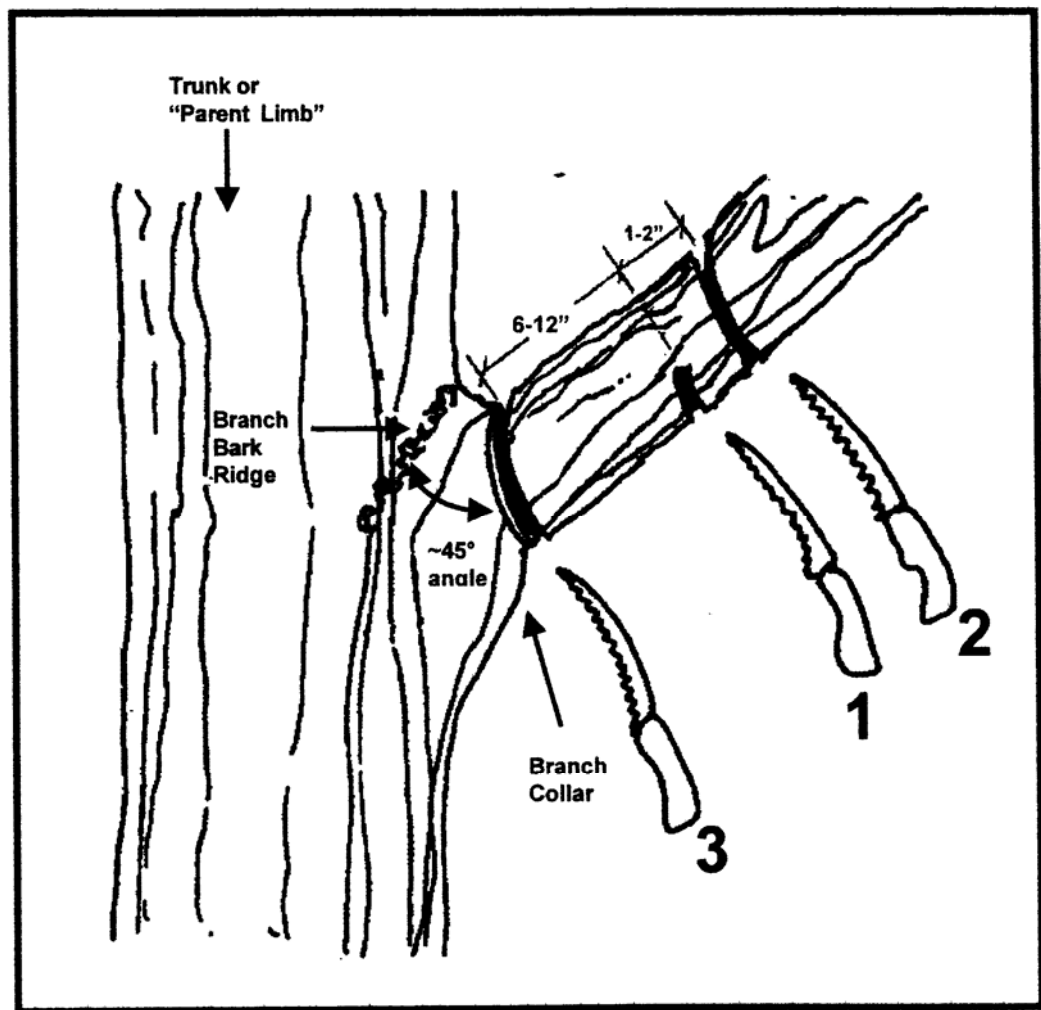
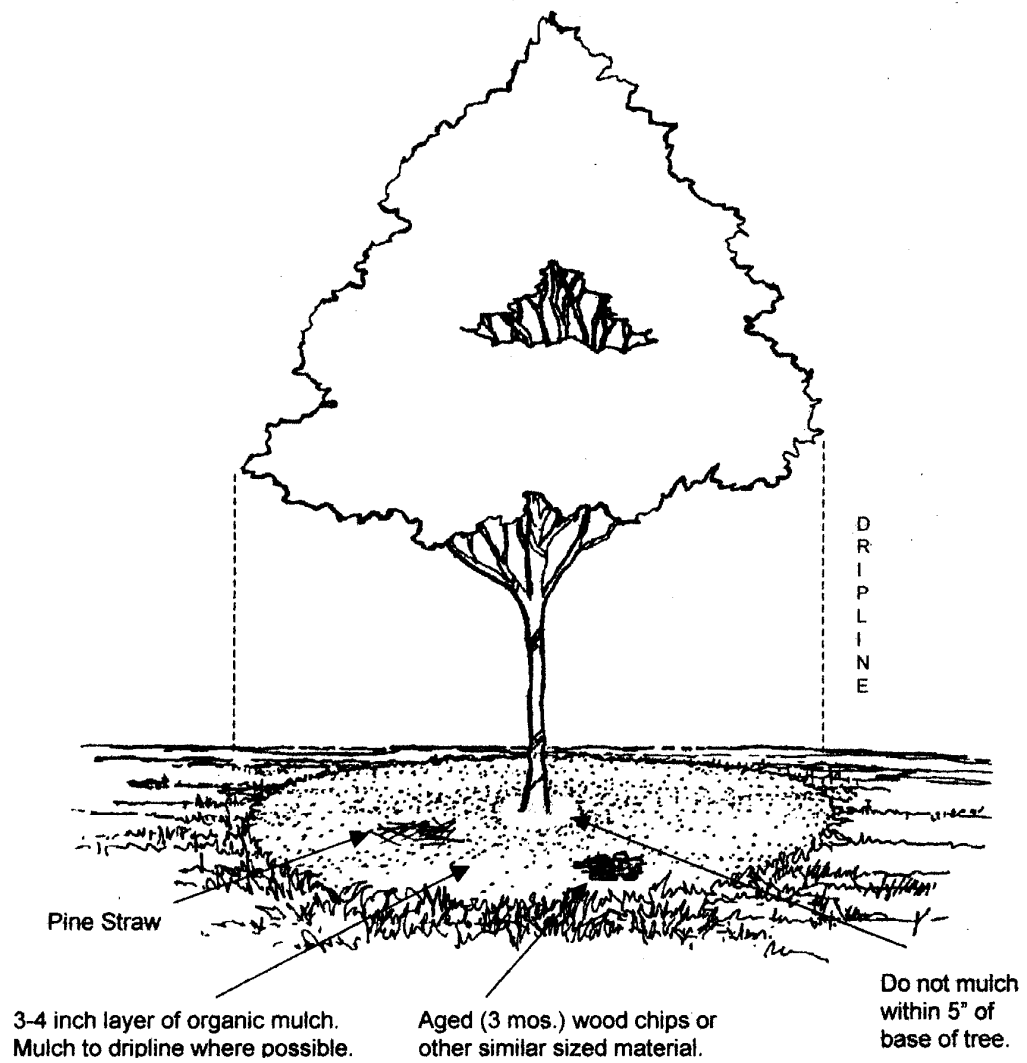


Figure 7. Mulching



3. Soil Environment

- a. Maintaining healthy soils reduces tree stress and improves tree the survival, growth, and longevity; improves root structure, and reduces the potential for tree failure.
- b. Adequate soil volume should be maintained throughout the life time of tree. In a normal surface planting environment with average soil depths greater than or equal to 3 feet, soil volume calculations can be based on surface areas as follows:
 - Small tree = 25 square feet.
 - Medium tree = 150 square feet.
 - Large tree = 300 square feet.
- c. Soil organic matter content should be maintained at about 5 percent.
- d. mulching trees will increase soil nutrient levels, organic matter content and improve soil structure.
- e. Root barriers should be used to redirect root growth away from sidewalks, curbs and driveways.
- f. Avoid soil compaction within the critical root zone of trees. Soil compaction results in a increase in soil bulk density, reduces soil pore space, decreases soil oxygen, and limits the availability of water
- g. Parking, driving, and the temporary storage of construction material within a tree's critical root zone will result in soil compaction.

4. Fertilization

- a. Trees that are in a urban growing environment with limited natural nutrient cycling should be fertilized on a regular (every 3 to 5 years) basis.
- b. If trees are exhibiting symptoms of nutrient deficiency, soils should be tested prior to fertilization, and the fertilizer formulation should be adjusted to address the specific deficiency.
- c. Newly planted, drought stressed or severely damaged or injured trees should not be fertilized
- d. Fertilizer should be applied when rots are actively growing. The best times are late winter, early spring through early summer.
- e. Nitrogen, phosphorus, and potassium (NPK) in a ration of 3:1:1 is most desirable.
- f. Slow release nitrogen should be applied at a rate of 2 to 4 pounds (of elemental nitrogen) per 1000 square feet of rooting area.
- g. Fertilizer should be applied within the entire root zone of trees. Sub-surface applications to a depth of 4 to 12 inches are ideal.
- h. The use of trunk fertilizer injections or implants is not recommended.

5. Irrigation

- a. Adequate soil moisture levels result in better tree growth, reduced stress, and reduced susceptibility to insect or disease problems.
- b. Excessive soil moisture can result in anaerobic conditions, nutrient deficiencies, and tree decline.
- c. Tree species should be matched to anticipated soil conditions.
- d. Mulching trees helps conserve water.
- e. In the absence of adequate rainfall trees should be irrigated at the rate of 1 inch of water every 5 to 7 days. Refer to table 6 for approximate water application times.
- f. Water should be applied evenly throughout the outer 75% of a tree's critical root zone. Runoff should be avoided

Table 6. Approximate Watering Time to Apply One Inch of Water Across Various Sized Critical Root Zones

Radius of CRZ (ft)	Volume of Water (gals) to Equal 1"	Total Application Time (minutes and hours) at a Delivery Rate of 5 Gallons Per				
		5 Sec	15 Sec	30 Sec	45 Sec	60 Sec
5	37	1 min	2 min	4 min	6 min	7 min
10	147	3 min	7 min	15 min	22 min	30 min
15	330	6 min	17 min	33 min	50 min	1 hr
20	587	10 min	29 min	1 hr	1 hr 30 min	2 hrs
25	917	15 min	46 min	1 hr 30 min	2 hr 30 min	3 hrs
30	1,322	22 min	1 hr	2 hrs	3 hr 30 min	4 hrs 30 min
35	1,799	30 min	1 hr 30 min	3 hrs	4 hr 30 min	6 hrs
40	2,349	39 min	2 hrs	4 hrs	6 hrs	8 hrs
45	2,973	50 min	1 hr 30 min	5 hrs	7 hrs 30 min	10 hrs
50	3,670	1 hr	3 hrs	6 hrs	9 hrs	12 hrs

Appendix 1.

Sandy Springs Tree Conservation Ordinance Site/Tree Conservation Plan Checklist

- Location, size and species of all trees.
- Location of any “waters of the state” and associated buffers
- Illustrated critical root zone (1.25 feet/inch (dbh) or professional discretion.
- Indication of trees proposed for protection/removal
- Indication of Landmark Trees
 - Sandy Springs Arborist determines the of survivability of Landmark Tree
 - Landmark replacement of comparable species and size
 - Canopy mitigation
- Indication of Boundary Trees
 - Funds placed in escrow for removal and replacement costs
- Location of trees proposed for planting.
 - Species, and caliper size of proposed trees
 - Documentation of minimum soil volume for proposed trees
 - Tree planting and staking details
- Location of proposed demolition, site development, and building construction.
- Proposed grade changes
- Proposed drainage structures
- Proposed utilities and utility structures
- Required undisturbed buffers
- Location of tree protection fencing

- Tree protection and tree planting standard details
- Arborist Note included on plan:

Contact the Department of the Community Development at 770.730.5600 to arrange a pre-construction meeting with the site inspector prior to the commencement of any construction or land disturbing activities.
- Canopy calculations
- Total canopy required
 - Protected canopy (measured)
 - Replacement canopy (attributed by species)
 - Sandy Springs Tree bank contribution

Appendix 2a.

Sandy Springs Tree Species List* Key to Symbols and Characteristics

The **Sandy Springs Tree Species List** is intended to support, site planning and design activities for tree conservation and establishment, and tree maintenance planning and decision-making. In the list trees are arranged alphabetically by the tree's common name with the "genus" listed first. For example, red maple is listed as "Maple, Red" (maple is the genus name). The Latin name is also listed for more definitive species identification. In some cases, the commonly planted variety or cultivar of the species has also been included apart from the species.

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
Species Common Name	Entered with genus common name first, then species, then cultivar if applicable. For some species an alternate common name is included in parentheses.
Latin Name	Genus, species, and variety or cultivar; always italicized or underlined.
RECOMMENDED USES	
Level of Use	The level of use that the tree should receive.
	P = Plant New Trees and Conserve Existing Trees
	C = Conserve Existing Trees
	L = For Limited Planting or Conservation Only
	N = Do Not Plant
Large Landscape Areas Road Frontages – Street Road Frontages – Yard Parking Lots Plazas and Downtown Settings Riparian Zones and Drainage Areas Utility Corridors	Recommendations on the site situation where the tree may be planted and/or conserved; locations where the tree would adapt well. O = tree to avoid; not suitable Blank = may or may not be suitable x = good choice XX = excellent choice

*Adapted from the Athens Clark County Tree Ordinance

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
PHYSICAL CHARACTERISTICS	
Height Class in Urban Conditions	Height class (ground to tip of leader or tallest branch) of a mature tree commonly achieved in urban situations with less than optimal growing conditions. S = Small: 15-25 feet M = Medium: 25-40 feet L = Large: 40 feet and taller
Crown Class in Urban Conditions	The width of the crown (at its widest point) commonly achieved in urban situations with less than optimal growing conditions. S = Small (400 square feet with a 20 foot crown diameter) M = Medium (625 square feet with a 25 foot crown diameter) L = Large (1,200 square feet with a 35 foot crown diameter)
Mature Crown Form	General shape of the tree crown (leaves and branches) when fully leafed out. Irregular Multi-Stemmed Oval (Columnar) Pyramidal Rounded Spreading Upright (Vase)
Typical Range of Mature Tree Height	Typical range of height of tree in feet from ground to bud at tip of leader or tallest branch under various conditions.
Typical Range of Mature Crown Width	Typical range of spread of branches in feet at the widest diameter across the crown under various conditions.
Leaf Type	Persistence and type of leaf on the tree. Deciduous trees lose their leaves in the fall. DB = Deciduous Broadleaf DC = Deciduous Conifer EB = Evergreen Broadleaf EC = Evergreen Conifer
Leaf Texture	Relative size and appearance of leaves. F = Fine M = Medium C = Coarse

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
PHYSICAL CHARACTERISTICS (continued)	
Flower Color	For trees with showy flowers, indicates the typical flower color.
	B = blue
	L = purple
	M = multiple colors: white, pink, purple, red, or others
	P = pink
	R = red
	W = white
	Y = yellow
	I = insignificant flowers: small with an unremarkable color
Flowering Time	For trees with showy flowers, the general season of blooming for the species.
Wildlife Value	Indicates with an "X" if the tree produces flowers (nectar) or fruits that are consumed by insects, birds, or mammals.
Excessive Litter	Indicates with an "X" if the tree produces large or hazardous leaves, fruit, or other litter.
ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES	
Native Tree Sandy Springs	Indicates whether or not the tree is found naturally growing in the Sandy Springs area.
	Y = Yes
	N = No
Growth Rate	Typical rate of growth under urban conditions.
	S = Slow: 1/2 to 1-1/2 feet/year
	M = Moderate: 1-1/2 to 2-1/2 feet/year
	F = Fast: 2-1/2 to 3+ feet/year
Average Life Span	The average life span (useful service life) of the species when growing under average urban conditions. A tree is at the end of its useful service life when its risk of failure becomes unacceptable and cannot be improved or when the tree is no longer an asset due to its appearance or condition.
	S = Short: less than 25 years useful service life.
	M = Moderate: 25 to 40 years useful service life.
	L = Large: 50 years or greater useful service life.
Net Effect on Air Quality	The net monetary effects in cents attributable to the species on air quality; listed as a benefit (positive) or cost (negative). Includes the species net effect on ozone, sulfur dioxide, nitrogen dioxide, particulate matter (PM10), and carbon monoxide.
Soil Moisture	The typical soil moisture conditions for the species in its native habitat.
	H = Hydric: wet and may be occasionally flooded for short periods
	M = Mesic: moist but moderately well- to well-drained
	X = Xeric: dry and very well-drained

TREE CHARACTERISTIC	DESCRIPTION and ENTRY CHOICES
ENVIRONMENTAL CHARACTERISTICS AND TOLERANCES (continued)	
Drought Tolerance	Tolerance of the species to infrequent rain, low soil moisture, full sun, and high temperatures.
	Low = not tolerant to drought conditions
	Moderate = tolerant to mild drought conditions; moderately tolerant to severe drought conditions
	High = very tolerant to mild to severe and prolonged drought conditions
Preferred Soil pH	Relative soil acidity or alkalinity preferred by the species. In many cases, a range of pH preference is given if it was available. In other cases, a general level is given. A pH of 7.0 is neutral, a pH of less than 7.0 is acidic, and a pH of greater than 7.0 is alkaline.
	ac = acidic (5.0 to 6.0)
	sl ac = slightly acidic (6.0 to 7.0)
	nu = neutral (7.0)
	sl al = sl alkaline (7.0 to 8.0)
	al = alkaline (8.0 to 8.5)
	n/a = no information available
Light Requirement	The amount of sunlight the species prefers or will tolerate. Trees that are typically found in the understory or are characteristic of late forest successional stages prefer shade or at least partial shade, while trees that typically form the overstory or are characteristic of early successional stages prefer full sun.
	FS = Full Sun
	PS = Partial Shade
	SH = Shade
Construction Tolerance/Limitations	The broad tolerance of the species in its home range to construction damage, and the limitations that constrain a species tolerance to damage.
	Tolerance
	P = Poor
	M = Moderate
	G = Good
	Limitations
	I = physical injury, wood compartmentalization and decay
	P = pest complications, including chronic and acute attacks
	S = soil conditions, including aeration and water availability
	C = limited climatic tolerances, including native range, hardiness, and micro-climate change
	A = all of the limitations described above
Urban Tolerant Tree	Based upon other characteristics and tolerances to urban conditions; an "X" indicates the species is suitable for planting under "tough" urban conditions.

Appendix 2.b Sandy Springs Tree Species List (Adapted from Athens Clark County 10/9/06)

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE			RECOMMENDED USES									PHYSICAL CHARACTERISTICS												ENVIRONMENTALCHARACTERISTICS AND TOLERANCES										
		Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter	Native Tree to Athens-Clarke Co.	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree	
Alder, Hazel (Tag)	Alnus serrulata	250		Small	P	XX					x	XX	x	S	VS	Multi-Stemmed	10-20	10-20	DB	M	YE	I				Y	F	S	n/a	W	M	acidic	FS	G/	X	
Ash, Green	Fraxinus pennsylvanica	1,000	2	Large	P	XX	x	XX	x	x		x		L	L	Rounded	60-100	40-50	DB	M	MU	I		X		Y	F	M	0.090	W	H	sl ac-sl alk	FS	G/		
Ash, White	Fraxinus americana	1,000	2	Large	P	XX	x	XX	x	x		x		L	L	Rounded	50-80	30-60	DB	M	MA	I		X		Y	M	M	0.100	M	L	sl ac-sl alk	FS	M/IS		
Baldcypress	Taxodium distichum	500	2	Medium	P	x		XX	x		XX	XX		L	M	Pyramidal	50-100	20-50	DC	F	BR	I		X		N	M	L	0.032	M	H	ac-sl alk	FS	G/	X	
Basswood, American (Linden)	Tilia americana	1,000		Large	C	x					x			M	L	Irregular	60-100	35-50	DB	C	YE	Y	Summer	X		Y	F	M	0.144	M	L	ac-alk	PS	P/A		
Beech, American	Fagus grandifolia	1,000		Large	P	XX					0	x		L	L	Oval	80-100	50-70	DB	M	YE	I		X		Y	S	L	0.160	M	L	acidic	FS	P/A		
Birch, River	Betula nigra	500	2	Medium	P	XX	x	XX	x	XX	XX	XX	0	M	M	Pyramidal	50-90	40-60	DB	F/M	YE	I				Y	F	M	0.117	M	L	acidic	PS	G/		
Birch, River 'Heritage'	Betula nigra 'Heritage'	500	2	Medium	P	XX	x	XX	x	XX	XX	XX	0	M	M	Pyramidal	50-90	40-60	DB	F/M	YE	I				Y	F	M	n/a	M	L	acidic	PS	n/a		
Blackgum (Tupelo)	Nyssa sylvatica	500	2	Medium	P	XX	x	XX	x			x		L	M	Oval	50-100	20-35	DB	M	RE	I		X		Y	S	M	-0.053	M	M	sl ac-sl alk	FS	G/	X	
Boxelder	Acer negundo	500		Medium	C	x					x	0		L	M	Rounded	50-75	40-50	DB	M	YE	I		X		Y	F	S	0.036	W	M	adapt	FS	G/		
Buckeye, Bottlebrush	Aesculus parviflora	250		Small	P							x		S	VS	Multi-Stemmed	15-20	10-15	DB	M	YE	W	Summer	X		N	M	S	n/a	M	L	ac-adapt	SH	n/a		
Buckeye, Painted	Aesculus sylvatica	250		Small	P	x					x	x		S	VS	Rounded	15-25	5-15	DB	M	YE	P/Y	Spring	X		Y	M	S	n/a	M	L	ac-adapt	SH	n/a		
Buckeye, Red	Aesculus pavia	250		Small	P							x		S	VS	Rounded	10-15	10-15	DB	M	YE	R	Spring	X		N	M	S	n/a	M	L	ac	PS	M/I		
Buckthorn, Carolina	Rhamnus caroliniana	500	1	Medium	P	x	x	x	x			x		M	M	Oval	30-40	10-30	DB	M	OR	I		X		Y	M	S	n/a	M	M	ac-alk	FS	M/IS		
Buckthorn, Common	Rhamnus cathartica	500	1	Medium	L				x				x	S	M	Rounded	20-25	20-25	DB	M	YE	I		X		N	M	S	n/a	M	H	adapt	FS	n/a	X	
Buttonbush, Common	Cephalanthus occidentalis	250		Small	P	x						x	x	S	VS	Multi-Stemmed	10-15	10-15	DB	M	YE	W	Late Summer	X		Y	M	S	n/a	W	L	n/a	FS	G/I		
Catalpa, Southern	Catalpa bignonioides	500		Medium	C	x		0		0		x		M	M	Rounded	30-40	30-40	DB	C	YE	W	Spring	X	X	Y	F	S	0.014	M	M	sl ac-sl alk	FS	G/		
Cedar, Deodar	Cedrus deodara	500		Medium	L	x								L	M	Pyramidal	40-100	40-100	EC	F	EV	I				N	M	L	-0.031	D	H	ac-sl alk	FS	g		
Cedar, Japanese	Cryptomeria japonica	500		Medium	L	x		x			x			L	M	Pyramidal	40-60	15-20	EC	F	EV	I				N	S	M	0.084	M	H	ac	FS	n/a	X	
Chastetree (Vitex)	Vitex agnus-castus	250		Small	P		x	x	x	x			x	S	VS	Multi-Stemmed	15-20	10-20	DB	M	I	B/L/W	Summer	X		N	M	S	n/a	D	H	ac-alk	FS	n/a	X	
Cherry, Black	Prunus serotina	500		Medium	C	x		x				x		L	M	Oval	50-90	15-50	DB	M	YE	W	Early Spring	X		Y	F	M	0.083	M	M	sl ac	FS	M/I		
Cherrylaurel, Carolina	Prunus caroliniana	500		Medium	C			0	x	0	0	XX	0	M	M	Oval	20-40	15-25	EB	M	EV	W	Spring	X		N	M	M	n/a	M	H	ac-sl alk	FS	G/	X	
Cherry, Japanese Flowering	Prunus serrulata	250		Small	L			x		x	XX	XX		S	S	Rounded	20-30	20-30	DB	M	OR	P	Spring			N	F	S	0.013	M	L	ac-alk	FS	n/a		
Cherry, Yoshino	Prunes x yedoensis	250		Small	L			XX		XX	XX	XX	XX	S	S	Rounded	20-45	20-40	DB	M	YE	P/W	Spring	X		N	F	S	n/a	M	L	ac	FS	n/a		
Chestnut, American	Castanea dentata	1,000		Large	N	susceptible to chestnut blight								L	L	-	-	-	-							Y										
Chestnut, Chinese	Castanea mollissima	1,000		Large	P	x		x						L	L	Rounded	40-60	40-60	DB	M	BR	W	Summer	X		N	S	L	n/a	D	M	ac-sl alk	FS	n/a	X	
Chinaberry	Melia azedarach	500		Medium	N	weed tree; brittle wood								M	M												N									
Chinquapin, Allegheny	Castanea pumila	250		Small	C	x							x	S	S	Rounded	10-25	10-25	DB	M	BR	I		X		Y	S	S	n/a	D	H	n/a	FS	P/P		
Cottonwood, Eastern	Populus deltoides	1,000	2	Large	C	x			x		0	x		L	L	Pyramidal	50-100	20-75	DB	C	YE	I		X	X	Y	F	M	-0.708	M	M	sl ac-sl alk	FS	G/	X	
Crabapple, Japanese Flowering	Malus floribunda	250		Small	L		x	x		x	XX	XX		S	S	Rounded	15-25	15-25	DB	M	YE	P	Spring	X		N	M	S	n/a	M	L	sl ac-sl alk	FS	n/a		
Crabapple, Southern	Malus angustifolia	250		Small	C	x	x	x			x		XX	S	S	Spreading	20-25	10-20	DB	M	YE	P	Spring	X	X	Y	M	S	n/a	M	L	sl ac-sl alk	FS	M/ICP		
Crapemyrtle, Common	Lagerstroemia indica	250		Small	P		XX	XX	XX	XX	XX	0	XX	S	VS	Multi-Stemmed	15-30	10-25	DB	F	RE	M	Summer			N	F	M	0.004	M	H	ac-sl alk	FS	n/a	X	
Cypress, Leyland	Cupressocyparis leylandii	250		Small	L	x		0	x	x		x		M	S	Pyramidal	50-60	20-30	EC	F	EV	I				N	F	M	0.053	M	M	ac-alk	FS	g		
Devil's Walking Stick	Aralia spinosa	250		Small	N	large thorns								S	VS												Y									
Devilwood	Osmanthus americanus	250		Small	C	x		x						S	S	Rounded	15-25	10-15	DB	M	YE	W	Spring	X		Y	M	M	n/a	M	M		PS	M/I		
Dogwood, Flowering	Cornus florida	250		Small	P	XX	XX	XX	0	0	XX		XX	S	S	Spreading	15-30	15-30	DB	M	RE	W	Spring	X		Y	M	M	0.021	M	L	ac-nu	PS	M/IP		
Dogwood, Flowering Pink	Cornus florida var. rubra	250		Small	P	XX	XX	XX	0	0	XX		x	S	S	Spreading	15-30	15-30	DB	M	RE	P	Spring	X		Y	M	M	n/a	M	L	n/a	PS	n/a		
Dogwood, Kousa	Cornus kousa	250		Small	P		x	x			x		x	S	S	Rounded	10-20	10-20	DB	M	RE	W	Spring	X		N	S	S	n/a	M	L	ac	PS	n/a		
Dogwood, Swamp	Cornus stricta	250		Small	C	x						x	x	S	S	Rounded	10-25	10-25	DB	M	RE	W	Spring	X		Y	S	S	n/a	W	L	n/a	PS	G/I		
Elm, American	Ulmus americana	1,000		Large	C	x		x				x		L	L	Upright	50-100	30-70	DB	M	YE	I		X		Y	M	M	0.143	M	H	sl ac-sl alk	FS	M/P		
Elm, Chinese (Lace Bark)	Ulmus parvifolia	500	1	Medium	L		0	XX	XX	XX	XX	0	0	M	M	Upright	40-60	30-50	DB	F/M	YE	I				N	F	M	0.058	M	H	sl ac-sl alk	FS	n/a	X	
Elm, Siberian	Ulmus pumila	500		Medium	N	pest susceptible; weed tree								L	M												N									
Elm, Slippery	Ulmus rubra	1,000		Large	C	x	x	x				x		L	L	Upright	70-80	30-50	DB	M	YE	I		X		Y	F	M	0.086	M	M	sl ac-sl alk	FS	M/P		
Elm, Winged	Ulmus alata	1,000	1	Large	P	XX	XX	XX	XX		0	0		L	L	Upright	70-80	30-50	DB	F	YE	I				Y	M	M	0.034	M	H	sl ac-sl alk	FS	G/	X	
Flametree, Chinese (Bougainvillea)	Koelreuteria bipinnata	250	1	Small	P			x						M	S	Rounded	20-40	20																		

Appendix 2.b Sandy Springs Tree Species List (Adapted from Athens Clark County 10/9/06)

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE			RECOMMENDED USES								PHYSICAL CHARACTERISTICS												ENVIRONMENTALCHARACTERISTICS AND TOLERANCES										
		Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter	Native Tree to Athens-Clarke Co.	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree
Fringetree (Grancy Gray Beard)	Chionanthus virginicus	250		Small	P	x	x	x			x		x	S	VS	Oval	10-30	5-15	DB	M/C	YE	W	Spring	X		Y	M	S	n/a	M	L	acidic	PS	M/IS	
Fringetree, Chinese	Chionanthus retusus	250		Small	P		x	x			x		x	S	VS	Rounded	15-25	10-15	DB	M/C	YE	W	Spring	X		N	S	S	n/a	M	M	acidic	PS	n/a	
Ginkgo (Female)	Ginkgo biloba	1,000		Large	L	x		0	x	0	0	0		M	L	Pyramidal	50-75	30-60	DB	C	YE	I			X	N	S	L	0.108	M	H	sl ac	FS	g	X
Ginkgo (Male)	Ginkgo biloba	1,000	1	Large	P	x	XX	XX	x	XX	0			M	L	Pyramidal	50-75	30-60	DB	C	YE	I				N	S	L	0.108	M	H	sl ac	FS	g	X
Goldenraintree	Koelreuteria paniculata	250	1	Small	P		x	x	x	x	x			L	L	Spreading	60-90	25-60	DB	F/M	YE	I		X		Y	M	M	-0.087	M	H	sl ac-sl alk	FS	n/a	
Hackberry, Common	Celtis occidentalis	1,000		Large	C	x		x				x		L	L	Spreading	25-35	25-35	DB	F/M	YE	I		X		Y	S	M	n/a	D	H	sl ac-sl alk	FS	M/IS	X
Hackberry, Georgia	Celtis tenuifolia	1,000		Large	C	x		x				x		S	S	Rounded	10-30	5-25	DB	F	MU	W	Late Spring	X		N	S	S	0.017	M	M	sl ac-sl alk	FS	g	
Hawthorne, Washington	Crataegus phaenopyrum	250		Small	P		x	x		x			x	L	L											N									
Hemlock, Eastern	Tsuga canadensis	1,000		Large	N									L	L	Oval	50-100	50-75	DB	M	YE	I		X		Y	F	L	0.069	M	L	acidic	FS	P/S	
Hickory, Bitternut	Carya cordiformis	1,000		Large	C	x		0	x	0	0			L	L	Oval	50-100	50-75	DB	M/C	YE	I		X	X	Y	S	L	0.059	D	H	sl ac	FS	MP/S	
Hickory, Mockernut	Carya tomentosa	1,000		Large	C	x		0	x	0	0			L	L	Oval	50-100	50-75	DB	M	YE	I		X		Y	S	L	0.058	M	H	sl ac	FS	M/S	
Hickory, Pignut	Carya glabra	1,000		Large	C	x		0	x	0	0			L	L	Oval	40-90	20-40	DB	M	YE	I		X		Y	S	M	n/a	D	H	sl ac	FS	M/	
Hickory, Sand	Carya pallida	1,000		Large	C	x		0	x	0	0			L	L	Oval	70-100	50-75	DB	M	YE	I		X		Y	S	L	0.064	M	M	sl ac	FS	P/S	
Hickory, Shagbark	Carya ovata	1,000		Large	C	x		0	x	0	0			L	L	Oval	60-80	40-60	DB	M	YE	I		X		Y	S	L	n/a	M	M	sl ac	FS	n/a	
Hickory, Southern Shagbark	Carya ovata var. australis	1,000		Large	C	x		0	x	0	0			M	VS	Pyramidal	20-70	15-25	EB	M	EV	I		X		Y	S	L	0.013	M	H	acidic	PS	G/	X
Holly, American	Ilex opaca	250		Small	C	x		XX	x		XX		0	S	VS	Rounded	10-20	10-20	DB	F	I	I		X		Y	M	S	n/a	W	H	ac-alk	PS	G/	
Holly, Deciduous (Possumhaw)	Ilex decidua	250		Small	P			x	x	x	x			S	VS	Pyramidal	15-25	10-15	EB	F/M	EV	I		X		N	S	S	n/a	M	H	sl ac	FS	n/a	X
Holly, Fosters	Ilex x attenuata 'Fosteri'	250		Small	L			x	x	x	x		x	S	VS	Rounded	10-20	10-15	EB	M	EV	I				N	S	S	n/a	M	H	ac	FS	n/a	
Holly, Ornamental Variety	Ilex species	250		Small	P	x		x	x	x	x		0	M	VS	Pyramidal	30-45	10-15	EB	M	EV	I		X		N	M	S	n/a	M	H	ac-sl alk	FS	n/a	
Holly, Savannah	Ilex x attenuata `Savannah'	250		Small	P		x	x	x	x			x	S	VS	Irregular	10-25	5-10	EB	F	EV	I		X		Y	S	S	n/a	D	H	ac-alk	FS	G/	X
Holly, Yaupon	Ilex vomitoria	250		Small	C	x		x		0	0			L	M	Irregular	60-80	30-50	DB	F	YE	I				Y	F	S	0.009	M	H	sl ac-sl alk	FS	G/	X
Honeylocust	Gleditsia triacanthos	500		Medium	P	x		x	x			x		M	M	Oval	15-40	10-30	DB	F/M	YE	W	Summer	X		Y	S	M	0.032	M	H	ac-alk	SH	M/S	X
Hophornbeam, American	Ostrya virginiana	500	1	Medium	P	XX	XX	XX	x	XX	XX	XX		M	M	Oval	20-35	15-30	DB	F/M	YE	I		X		Y	S	M	0.009	M	M	sl ac-sl alk	PS	M/SC	
Hornbeam, Am. (Ironwood, Blue Beech)	Carpinus caroliniana	500	1	Medium	P		XX	XX	XX	XX	x			M	M	Oval	40-60	35-40	DB	F/M	YE	I		X		N	S	M	0.037	M	H	ac-alk	PS	n/a	X
Hornbeam, European	Carpinus betulus	500	1	Medium	L		x	x	x	x	x			M	S	Oval	20-30	20-30	DB	M	RE	I				N	S	M	n/a	M	M	adapt	PS	n/a	
Hornbeam, Japanese	Carpinus japonica	250		Small	L	x		x	x					M	M	Spreading	40-60	35-60	DB	M	YE	I				N	F	L	n/a	M	L	ac-sl alk	FS	pm	
Katsuratree	Cercidiphyllum japonicum	500	1	Medium	C	x				0	0	x		L	M	Spreading	40-90	20-40	DB	F	YE	W	Spring	X		Y	F	M	-0.123	M	H	sl ac-sl alk	FS	G/P	X
Locust, Black	Robinia pseudoacacia	500		Medium	C	x		x	0			x		L	L	Upright	60-80	20-60	DB	C	YE	W	Spring	X		Y	F	M	n/a	M	L	acidic	PS	M/I	
Magnolia, Cucumber	Magnolia acuminata	1,000		Large	L			x	0				x	M	M	Upright	20-30	10-30	DB	C	YE	P	Late Winter			N	M	S	0.009	M	L	acidic	FS	n/a	
Magnolia, Japanese (Saucer)	Magnolia x soulangiana	500		Medium	P	XX		XX	0		XX		0	L	L	Pyramidal	80-100	30-50	EB	C	EV	W	Late Spring	X	X	Y	M	L	0.002	M	M	acidic	FS	M/I	
Magnolia, Southern	Magnolia grandiflora	1,000		Large	P			x	0		x		XX	M	VS	Pyramidal	40-60	20-30	EB	C	EV	W	Late Spring	X	X	Y	S	M	n/a	M	L	acidic	FS	n/a	
Magnolia, Southern 'Little Gem'	Magnolia grandiflora 'Little Gem'	250		Small	L		x	x					x	S	VS	Multi-Stemmed	15-20	15-20	DB	M	YE	W	Late Winter	X		N	S	S	n/a	M	M	acidic	PS	n/a	
Magnolia, Star	Magnolia stellata	250		Small	P	XX		x	x		XX	XX		M	M	Oval	30-60	20-40	EB	C	EV	W	Summer	X		Y	F	M	n/a	W	L	acidic	PS	G/	
Magnolia, Sweetbay	Magnolia virginiana	500	2	Medium	P		x	x					x	S	S	Rounded	15-25	15-25	DB	M	RE	W	Spring			N	M	M	0.008	M	M	adapt	FS	n/a	
Maple, Amur	Acer ginnala	250		Small	P	x	x	x	x		x			M	M	Spreading	20-40	10-30	DB	M	I	I				Y	M	M	n/a	M	H	ac-sl alk	FS	P/A	X
Maple, Chalk	Acer leucoderme	500	1	Medium	P		x	x	x		x			M	M	Rounded	25-35	25-35	DB	M	YE	I				N	S	S	0.017	M	H	ac-alk	FS	n/a	X
Maple, Hedge	Acer campestre	500	1	Medium	L	0		x	0				x	S	S	Oval	15-25	10-25	DB	M	RE	I				N	S	S	0.008	M	L	sl ac-sl alk	PS	n/a	
Maple, Japanese	Acer palmatum	250		Small	N									M	M											N									
Maple, Norway	Acer platanoides	500		Medium	P	XX	XX	XX	x	XX	XX	XX	0	M	M	Rounded	40-90	20-35	DB	M	RE	R	Late Winter	X		Y	F	L	0.084	M	L	sl ac	FS	G/	
Maple, Red	Acer rubrum	500	2	Medium	L		0		x	0	0			L	L	Rounded	50-80	40-60	DB	M	YE	I				N	F	S	0.084	M	H	ac	FS	P/A	
Maple, Silver	Acer saccharinum	1,000		Large	P	XX	x	XX	x	XX	XX	x		M	M	Rounded	40-70	25-60	DB	M	OR	I				Y	M	M	n/a	M	H	ac	FS	M/IS	X
Maple, Southern Sugar (Florida Sugar)	Acer barbatum	500	1	Medium	P	XX	XX	XX	x			x	0	L	L	Oval	60-80	30-50	DB	M	OR	I		X		Y	M	L	0.100	M	M	sl ac-sl alk	PS	pm	
Maple, Sugar	Acer saccharum	1,000	2	Large	P	XX	XX	XX	x				0	L	L	Oval	60-80	30-50	DB	M	OR	I		X		Y	F	L	0.100	M	M	sl ac-sl alk	PS	n/a	
Maple, Sugar 'Green Mountain'	Acer saccharum 'Green Mountain'	1,000	2	Large	P	XX</																													

Appendix 2.b Sandy Springs Tree Species List (Adapted from Athens Clark County 10/9/06)

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		
		Square Feet of Canopy	Parking Lot Canopy Tree	Canopy Size Category
Maple, Trident	<i>Acer buergeranum</i>	250	1	Small
Mimosa	<i>Albizia julibrissin</i>	500		Medium
Mulberry, Red	<i>Morus rubra</i>	500		Medium
Oak, Black	<i>Quercus velutina</i>	1,000	2	Large
Oak, Cherrybark	<i>Quercus falcata</i> var. <i>pagodifolia</i>	1,000	2	Large
Oak, Chestnut	<i>Quercus prinus</i>	1,000		Large
Oak, Diamond Leaf (Laurel)	<i>Quercus laurifolia</i>	1,000		Large
Oak, English	<i>Quercus robur</i>	1,000		Large
Oak, Georgia	<i>Quercus georgiana</i>	1,000		Large
Oak, Laurel	<i>Quercus hemisphaerica</i>	1,000	1	Large
Oak, Laurel 'Darlington'	<i>Quercus hemisphaerica</i> 'Darlington'	1,000	1	Large
Oak, Live	<i>Quercus virginiana</i>	1,000		Large
Oak, Northern Red	<i>Quercus rubra</i>	1,000	2	Large
Oak, Nuttall	<i>Quercus nuttalli</i>	1,000	1	Large
Oak, Oglethorpe	<i>Quercus oglethorpensis</i>	1,000		Large
Oak, Overcup	<i>Quercus lyrata</i>	1,000	2	Large
Oak, Pin	<i>Quercus palustris</i>	1,000		Large
Oak, Post	<i>Quercus stellata</i>	1,000		Large
Oak, Sawtooth	<i>Quercus acutissima</i>	1,000		Large
Oak, Scarlet	<i>Quercus coccinea</i>	1,000	2	Large
Oak, Shumard	<i>Quercus shumardii</i>	1,000	1	Large
Oak, Southern Red	<i>Quercus falcata</i>	1,000	2	Large
Oak, Swamp Chestnut	<i>Quercus michauxii</i>	1,000		Large
Oak, Swamp White	<i>Quercus bicolor</i>	1,000		Large
Oak, Water	<i>Quercus nigra</i>	1,000		Large
Oak, White	<i>Quercus alba</i>	1,000		Large
Oak, Willow	<i>Quercus phellos</i>	1,000	1	Large
Orange, Osage	<i>Maclura pomifera</i>	500		Medium
Parrotia	<i>Parrotia persica</i>	250		Small
Pecan	<i>Carya illinoensis</i>	1,000		Large
Persimmon, Common	<i>Diospyros virginiana</i>	500		Medium
Pine, Eastern White	<i>Pinus strobus</i>	1,000		Large
Pine, Loblolly	<i>Pinus taeda</i>	1,000		Large
Pine, Longleaf	<i>Pinus palustris</i>	1,000		Large
Pine, Shortleaf	<i>Pinus echinata</i>	1,000		Large
Pine, Slash	<i>Pinus elliotii</i>	1,000		Large
Pine, Virginia	<i>Pinus virginiana</i>	500		Medium
Pistache, Chinese	<i>Pistacia chinensis</i>	500	1	Medium
Planetree, London	<i>Platanus x acerifolia</i>	1,000	2	Large
Plum, Chickasaw	<i>Prunus angustifolia</i>	250		Small
Plum, Purpleleaf	<i>Prunus cerasifera</i>	250		Small
Poplar, Lombardy	<i>Populus nigra</i> var. <i>italica</i>	500		Medium
Poplar, White	<i>Populus alba</i>	500		Medium
Poplar, Yellow (Tuliptree)	<i>Liriodendron tulipifera</i>	1,000	2	Large
Redbud, Eastern	<i>Cercis canadensis</i>	250		Small

RECOMMENDED USES							
Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas
P	0	XX	XX	XX	XX	XX	XX
N	pest susceptible; weed tree						
C	x	0		0	0	x	
C	x		x	x			x
P	x		x	x			x
P	x	0	XX	0	0		0
P	x	x	x				
L		x	x				
C	x		x				
P	x	x	x	x			
P	x	XX	XX	x			
N	out of range						
P	XX	x	XX	x			
P	x	x	x	x			
C	x	x	x				
P	XX	XX	XX	x			x
L	0	x	x	0	0		0
C	x	x	XX				
L	0	0	x	0	0		0
P	XX	XX	XX	x			
P	XX	XX	XX	XX	XX		
P	XX	x	XX	x			x
P	x	0	x	0	0		x
P	x	x	x				x
P	XX	x	XX			XX	0
P	XX	x	XX				
P	XX	XX	XX	XX	XX	0	XX
L	x	0	x	0	0		0
L		x	x				x
P	x	0	x	0	0	0	
P	x		0	x	0	0	x
N	pest susceptible; not heat tolerant						
P	XX	x	x	XX		XX	x
C			x	x		x	0
P	XX	x	x	x		x	x
C			x	x		x	0
P	x		x	x		XX	x
P		x	XX	XX	x	x	0
P	x	XX	XX	XX			
C	x	0	x			x	
L		x	x			XX	x
N	not heat tolerant						
C			x				
P	XX		x	x			XX
P	XX	XX	XX		XX	XX	x

PHYSICAL CHARACTERISTICS											
Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter
S	S	Rounded	20-45	20-30	DB	M	MU	I			
M	M					M					
L	M	Rounded	40-70	20-50	DB	C	YE	I		X	X
L	L	Rounded	70-90	50-60	DB	M	RE	I		X	
L	L	Rounded	60-100	30-50	DB	M	RE	I		X	
L	L	Rounded	50-80	30-60	DB	M	RE	I		X	X
L	L	Rounded	60-80	50-60	DB	M	YE	I		X	
L	L	Rounded	40-60	40-60	DB	M	BR	I		X	
L	L	Rounded	20-40	10-30	DB	M	BR	I		X	
L	L	Rounded	60-90	50-60	DB	M	BR	I		X	
L	L	Rounded	60-90	50-60	DB	F	BR	I		X	
L	L										
L	L	Rounded	60-100	30-60	DB	M	RE	I		X	
L	L	Rounded	60-80	35-50	DB	M	RE	I		X	
M	L	Rounded	40-70	30-50	DB	M	RE	I		X	
L	L	Rounded	30-45	30-45	DB	M	BR	I		X	
L	L	Pyramidal	40-100	20-50	DB	M	RE	I		X	
L	L	Rounded	40-50	35-40	DB	M/C	BR	I		X	
M	L	Oval	50-60	30-60	DB	M	YE	I		X	X
L	L	Rounded	50-80	30-50	DB	M	RE	I		X	
L	L	Rounded	60-100	30-70	DB	M	RE	I		X	
L	L	Rounded	60-100	30-70	DB	M	OR	I		X	
L	L	Oval	70-90	30-60	DB	M	YE	I		X	
L	L	Oval	70-90	30-60	DB	M	YE	I		X	
L	L	Rounded	50-100	30-70	DB	M	YE	I		X	
L	L	Rounded	60-100	30-80	DB	M	RE	I		X	
L	L	Rounded	40-100	30-60	DB	F/M	YE	I		X	
M	M	Spreading	30-40	30-40	DB	M/C	YE	I		X	X
S	S	Rounded	20-40	20-35	DB	M	OR	R	Spring		
L	L	Upright	60-100	30-75	DB	M/C	YE	I		X	X
L	M	Oval	70-80	40-60	DB	M	RE	I		X	X
L	L										
L	L	Pyramidal	80-100	20-40	EC	F	EV	I		X	
L	L	Pyramidal	60-100	20-40	EC	F	EV	I		X	
L	L	Pyramidal	60-100	20-40	EC	F	EV	I		X	
L	L	Pyramidal	60-100	20-50	EC	F	EV	I		X	
M	M	Pyramidal	15-70	10-35	EC	F	EV	I		X	
M	M	Rounded	60-80	40-50	DB	M	RE	G	Spring	X	
L	L	Irregular	60-100	20-80	DB	C	YE	I			
S	VS	Rounded	10-20	10-20	DB	F	I	W	Late Winter	X	
S	S	Rounded	10-25	10-25	DB	F	RE	P/W	Spring	X	
L	M										
L	M	Oval	40-100	20-60	DB	C	YE	I			
L	L	Oval	80-250	30-60	DB	C	YE	Y	Spring	X	
S	S	Spreading	25-50	15-25	DB	M	YE	P	Spring	X	

ENVIRONMENTALCHARACTERISTICS AND TOLERANCES											
Native Tree to Athens-Clarke Co.	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree		
N	F	M	n/a	M	M	ac-alk	FS	n/a	X		
N											
Y	F	S	0.099	M	H	sl ac-sl alk	FS	G/			
Y	M	L	-0.253	D	H	sl ac	FS	G/			
Y	M	L	n/a	M	M	ac	FS	G/			
Y	S	L	-0.342	D	H	acidic	FS	GM/S			
N	M	L	n/a	M	M	ac-sl alk	FS	G/			
N	S	M	-0.275	M	M	sl ac-sl alk	FS	n/a			
Y	M	M	n/a	D	H	ac-alk	FS	n/a			
N	F	M	-0.314	D	H	adapt	FS	n/a			
N	F	M	n/a	D	H	adapt	FS	n/a			
N											
Y	F	L	-0.503	M	M	ac-sl ac	FS	GM/SC			
Y	M	L	n/a	M	M	ac	FS	n/a			
Y	S	M	n/a	W	M	n/a	FS	n/a			
Y	M	L	-0.159	W	M	ac-sl alk	FS	G/			
N	M	M	-0.483	M	M	acidic	FS	mg			
Y	M	L	-0.327	D	H	ac-sl alk	FS	G/			
N	F	M	-0.159	M	M	ac-sl alk	FS	n/a			
Y	M	L	-0.592	D	H	sl ac	FS	G/			
Y	F	L	-0.265	M	H	ac-alk	FS	G/			
Y	M	L	-0.576	M	H	ac	FS	G/			
Y	M	L	-0.544	M	M	n/a	FS	G/			
Y	M	L	-0.457	M	M	n/a	FS	G/			
Y	F	M	-0.451	M	M	ac-sl alk	FS	G/			
Y	S	L	-0.348	M	M	acidic	FS	GM/S			
Y	F	L	-0.314	M	H	acidic	FS	GM/S	X		
N	F	L	0.000	D	H	sl ac-sl alk	FS	n/a	X		
N	F	S	n/a	M	M	ac-sl alk		n/a			
N	S	M	0.088	M	L	sl ac-sl alk	FS	mg			
Y	M	S	0.058	M	H	ac-alk	FS	G/P	X		
N											
Y	F	M	0.016	M	M	acidic	FS	G/			
N	M	L	0.010	M	H	ac-sl alk	FS	GM/C			
Y	M	L	0.008	M	H	ac	PS	GM/P			
N	F	M	0.010	M	M	ac-sl alk	FS	G/			
Y	F	S	0.003	M	H	ac	FS	G/	X		
N	M	M	n/a	M	H	ac-alk	FS	n/a	X		
N	F	M	-0.415	M	H	sl ac-sl alk	FS	pg	X		
Y	M	S	n/a	M	H	sl ac-sl alk	FS	M/IS			
N	M	S	0.014	M	M	sl ac-sl alk	FS	mg			
N											
N	F	M	-0.417	M	H	ac-alk	FS	n/a			
Y	M	L	0.171	M	L	sl ac	FS	P/IS			
Y	F	S	0.012	M	M	ac-sl ac	PS	M/S			

Appendix 2.b Sandy Springs Tree Species List (Adapted from Athens Clark County 10/9/06)

SPECIES COMMON NAME	LATIN NAME	CANOPY AREA FOR DEVELOPMENT CODE		RECOMMENDED USES									PHYSICAL CHARACTERISTICS												ENVIRONMENTALCHARACTERISTICS AND TOLERANCES										
		Square Feet of Canopy	Parking Lot Canopy Tree Canopy Size Category	Level of Use	Large Landscape Areas	Road Frontages - Street	Road Frontages - Yard	Parking Lots	Plazas and Downtown Settings	Buffers	Riparian Zones and Drainage Areas	Utility Corridors	Height Class in Urban Conditions	Crown Class in Urban Conditions	Mature Crown Form	Typical Range of Mature Tree Height	Typical Range of Mature Crown Width	Leaf Type	Leaf Texture	Fall Leaf Color	Flower Color	Flowering Time	Wildlife Value	Excessive Litter	Native Tree to Athens-Clarke Co.	Growth Rate	Average Life Span	Net Effect on Air Quality	Soil Moisture	Drought Tolerance	Preferred Soil pH	Light Requirement	Construction Tolerance/Limitations	Urban Tolerant Tree	
Redbud, Eastern White	Cercis canadensis var. alba	250	Small	P	x	XX	XX		XX	x	x	XX	S	S	Spreading	20-30	15-25	DB	M	YE	W	Spring	X		Y	F	S	n/a	M	M	ac-sl ac	PS	n/a		
Redbud, 'Forest Pansy'	Cercis canadensis 'Forest Pansy'	250	Small	P	x	XX	XX		XX	x	x	XX	S	S	Spreading	20-30	15-25	DB	M	YE	P	Spring	X		Y	F	S	n/a	M	L	ac-sl ac	PS	n/a		
Redbud, 'Oklahoma'	Cercis reniformis 'Oklahoma'	250	Small	P		XX	XX	x	XX			XX	S	S	Rounded	20-25	15-20	DB	M	YE	P	Spring	X		N	M	S	n/a	D	H	ac-sl ac	FS	n/a	X	
Redbud, 'Texas White'	Cercis reniformis 'Texas White'	250	Small	P		XX	XX	x	XX			XX	S	S	Rounded	20-25	15-20	DB	M	YE	W	Spring	X		N	M	S	n/a	D	H	ac-sl ac	FS	n/a		
Redcedar, Eastern	Juniperus virginiana	500	Medium	P	x		XX	x		XX	x	0	M	M	Pyramidal	40-60	10-20	EC	F	EV	I		X		Y	S	M	-0.010	M	H	ac-nu	FS	M/IS		
Redwood, Dawn	Metasequoia glyptostroboides	500	Medium	P	x		XX	x		XX			L	M	Pyramidal	75-100	25-30	DC	F	BR	I				N	F	L	0.163	M	M	n/a	FS	n/a	X	
Royal Paulownia (Princess-Tree)	Paulownia tomentosa	500	Medium	L		0	x		0	0		0	M	M	Irregular	30-50	20-50	DB	C	YE	P	Spring		X	N	F	S	0.022	M	M	ac-sl alk	FS	g		
Sassafras	Sassafras albidum	500	Medium	C	x		x			x	x		M	M	Oval	30-60	20-40	DB	M	OR	Y	Spring	X		Y	M	M	0.069	M	H	sl ac	FS	G/		
Serviceberry, Downy	Amelanchier arborea	250	Small	P	XX	XX	XX		XX	XX	x	x	S	S	Irregular	15-40	10-20	DB	M	OR	W	Spring	X		Y	S	M	0.004	M	M	acidic	PS	M/IS		
Silverbell, Carolina	Halesia carolina	500	2 Medium	P	XX	x	x	x			x		M	M	Irregular	30-60	20-35	DB	M	YE	W	Spring			Y	M	M	n/a	M	L	ac-sl alk	PS	M/ISC		
Smoketree, American	Cotinus obovatus	250	Small	L			x					x	S	VS	Oval	15-30	10-25	DB	M	MU	P	Spring			Y	M	S	n/a	D	H	sl ac-sl alk	PS	n/a	X	
Smoketree, Common	Cotinus coggygria	250	Small	L			x					x	S	VS	Oval	10-15	10-15	DB	M	MU	P	Late Spring			N	M	S	n/a	D	H	sl ac-sl alk	FS	n/a	X	
Sourwood	Oxydendrum arboreum	500	2 Medium	C	XX		x	x					M	M	Spreading	30-60	20-30	DB	M	RE	W	Summer			Y	M	S	0.018	M	M	ac-sl ac	FS	P/A		
Sparkleberry, Tree	Vaccinium arboreum	250	Small	C			x				x	x	S	VS	Irregular	10-20	5-10	DB	F	RE	W	Late Spring	X		Y	S	S	n/a	M	M	ac-sl alk	S	M/A		
Spruce Varieties	Picea species	500	Medium	N					not heat tolerant				L	M											N										
Sugarberry	Celtis laevigata	1,000	Large	C	x		x				0	x		L	L	Spreading	60-80	25-60	DB	F/M	YE	I		X		Y	M	M	0.118	M	M	ac	FS	G/I	
Sweetgum	Liquidambar styraciflua	1,000	Large	C	x		0	x	0	0	x		L	L	Oval	60-80	40-60	DB	M	MU	I		X	X	Y	F	L	-0.488	M	L	sl ac	FS	G/		
Sweetgum, Fruitless	Liquidambar styraciflua 'Rotundiloba'	1,000	2 Large	P	x		x	x	x				L	L	Oval	50-70	35-45	DB	C	MU	I				Y	M	M	n/a	M	L	ac-sl alk	FS	n/a		
Sycamore	Platanus occidentalis	1,000	2 Large	P	x		x	x			x	0	L	L	Oval	70-100	30-70	DB	C	BR	I		X		Y	F	M	-0.789	M	M	sl ac-sl alk	FS	G/		
Tallowtree, Chinese	Sapium sebiferum	500	Medium	N					invasive				M	M											N										
Tree-of-Heaven (Ailanthus)	Ailanthus altissima	500	Medium	N					brittle wood; weed tree				M	M											N										
Walnut, Black	Juglans nigra	1,000	Large	C	x		0	x	0	0	x		L	L	Rounded	60-70	50-70	DB	M	YE	I		X	X	Y	M	L	0.086	M	L	acidic	FS	P/IS		
Waxmyrtle, Southern	Myrica cerifera	250	Small	P			x	x		x		0	x	S	VS	Multi-Stemmed	10-30	10-30	EB	F	EV	I		X		N	M	S	n/a	M	M	ac-alk	FS	G/	
Willow, Black	Salix nigra	500	Medium	C	x		0		0	0	x	0	M	M	Irregular	30-40	30-40	DB	F/M	YE	I				Y	F	S	-0.177	W	L	n/a	FS	G/		
Willow, Weeping	Salix babylonica	1,000	Large	L	x		0	x	0	0		0	L	L	Rounded	30-70	20-70	DB	F/M	YE	I				N	F	M	-0.096	W	M	acidic	FS	mg		
Winterberry, Common	Ilex verticillata	250	Small	P	x	x	x			x	x	x	S	VS	Multi-Stemmed	5-15	5-10	DB	M	I	I		X		Y	M	S	n/a	M	L	ac	FS	G/		
Witchhazel, Common	Hamamelis virginiana	250	Small	P	x		x		x		x	x	S	S	Spreading	20-35	20-35	DB	M/C	YE	Y	Fall			Y	M	M	-0.009	M	M	sl ac	PS	M/IS		
Yellowwood, American	Cladrastis kentukea	500	2 Medium	L	x		x	x					M	M	Upright	30-50	40-50	DB	M/C	YE	W	Spring			N	M	M	0.013	M	M	n/a	PS	P/A		
Zelkova, Japanese	Zelkova serrata	1,000	1 Large	L			x	x	x			0	0	L	L	Upright	40-80	30-75	DB	M	RE	I				N	M	M	0.084	M	H	ac-sl alk	FS	n/a	X

1 = trees that will project significant shade, intercept enough water, substantially filter out pollutants, and survive the conditions within a parking area to the extent they could be considered a "canopy" tree.

2 = same as 1, except that these trees are ONLY appropriate for large, expanded tree islands or landscape strips, swales, or moist soil conditions with plenty of rooting space.